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ABSTRACT

This Vocational-Technical Education Consortium of States (V-TECS) criterion-referenced test item bank provides 696 multiple-choice items and 33 matching items for radiologic technology occupations. These job titles are included: radiologic technologist, chief; radiologic technologist; nuclear medicine technologist; radiation therapy technologist; and ultrasound technologist. The following information is provided in code format for each test item: catalog number; state; date; item type; duty; task; learning domain; number of graphics; answer; and unique number. (YLB)

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V-TECS CRITERION-REFERENCED TEST ITEM BANK

FOR

RADIOLOGIC TECHNOLOGY OCCUPATIONS

CIP Code: 41.0204

for the Job Titles of

Radiologic Technologist, Chief DOT: 078.162-010

Radiologic Technologist DOT: 078.362-026

Nuclear Medicine Technologist DOT: 078.361-018

Radiation Therapy Technologist DOT: 078.361-034

Ultrasound Technologist DOT: 078.364-010

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The Radiologic Technology Occupations Criterion-Referenced Test Item Bank was developed by radiologic administrators, workers and educators in Illinois.

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RADIOLOGIC TECHNOLOGY OCCUPATIONS TEST ITEM BANK

1. Catalog Information:

Catalog Title: Radiologic Technology Occupations

Catalog Number: IL017C

DOT codes:	078.162-010	Radiologic Technologist, Chief
	078.362-026	Radiologic Technologist
	078.361-018	Nuclear Medicine Technologist
	078.361-034	Radiation Therapy Technologist
	078.364-010	Ultrasound Technologist
CIP code:	41.0204	

2. V-TECS Project Number

Radiologic Technology Occupations item development project number: IL017T

3. Related Guide

Guide Title: Radiologic Technology Occupations
Guide Number: IL017G

4. Item Code Layout

*	CATALOG NUMBER	STATE	DATE	ITEM TYPE	DUTY	TASK	LEARNING DOMAIN	# OF GRAPHICS	ANSWER	UNIQUE NUMBER

5. Number of items:

696 multiple choice items
33 matching items

*|IL017T|IL|0688|MC|A |001|C2|0|A|000001
When using pickup forceps for vial handling, sufficient shielding material must be used to reduce the exposure rate to how many milliroentgens per hour at a distance of 1 meter from the source?

a. 2
b. 3
c. 4
d. 5

*|IL017T|IL|0688|MC|A |001|C1|0|C|000002
Workload is an expression of the total of radiation exposure during a week and is described in units of:

a. milliampere-minutes per hour.
b. milliampere-minutes per day.
c. milliampere-minutes per week.
d. milliampere-minutes per month.

*|IL017T|IL|0688|MC|A |002|C2|0|B|000003
A workload for a radiographic room would rarely exceed how many mA/min/wk?

a. 250
b. 500
c. 750
d. 1000

*|IL017T|IL|0688|MC|A |002|C1|0|D|000004
A pregnant nuclear medicine technologist should be:

a. placed on leave as soon as it is determined that she is pregnant.
b. allowed to work until the 8th month of pregnancy.
c. transferred to a position in which she will receive no radiation.
d. carefully evaluated so that there is no danger of her receiving more than 0.5 rem of radiation.

*|IL017T|IL|0688|MC|A |002|C1|0|A|000005
Pregnant nurses should cease being responsible for the routine care of radioactive patients with large radioactive burdens:

a. as soon as their pregnancy is discovered.
b. after three months of pregnancy.
c. after six months of pregnancy.
d. after eight months of pregnancy.

*|IL017T|IL|0688|MC|A |002|C1|0|C|000006
The primary purpose of daily worksheets is to:

a. schedule examinations.
b. keep technologists busy.
c. organize departmental work flow.
d. provide monthly report information.

*|IL017T|IL|0688|MC|A |003|C1|0|A|000007
Information found on daily assignment sheets includes:

a. technologist name, date and scheduled procedure.
b. technologist name, identification number and patient name.
c. duty hours, patient status, and examination rooms.
d. date, time and patient status.

*|IL017T|IL|0688|MC|A |003|C1|0|B|000008
The primary purpose of the daily testing/therapy log is to:

a. comply with federal regulations.
b. provide a record of work performed in department.
c. verify work performed by each technologist.
d. comply with union regulations.

*|IL017T|IL|0688|MC|A |004|C1|0|A|000009
The maximum number of radioactive patients a special duty nurse should care for per month is:

a. one.
b. two.
c. five.
d. ten.

*|IL017T|IL|0688|MC|A |004|C1|0|D|000010
All of the following are found in the daily testing/therapy log EXCEPT the:

a. patient's name and identification.
b. patient status.
c. test/therapy performed.
d. referring physician.

*|IL017T|IL|0688|MC|A |004|C1|0|A|000011
The purpose of the monthly test count chart is to identify the number of tests performed in the department and to log the:

a. number of patients tested.
b. number of hours for each technologist.
c. hours of equipment usage.
d. time spent on each exam.

*|IL017T|IL|0688|MC|A |005|C1|0|B|000012
Which of the following information is found on the monthly test count chart?

a. patient's name
b. type of test
c. referring physician
d. technologist name

*|IL017T|IL|0688|MC|A |005|C1|0|A|000013
When preparing a maintenance request, the FIRST thing the technologist should do is to:

a. verify maintenance agreement status.
b. call department supervisor.
c. sign or initial maintenance request.
d. call maintenance contractor.

*|IL017T|IL|0688|MC|A |005|C1|0|D|000014
Which of the following information is NOT found on a maintenance request?

a. equipment serial number
b. description of problem
c. status of request
d. equipment history

*|IL017T|IL|0688|MC|A |006|C1|0|C|000015
Patients undergoing radionuclide therapy should be hospitalized if the dose being administered is GREATER than:

a. 10 mCi.
b. 20 mCi.
c. 30 mCi.
d. 40 mCi.

*|IL017T|IL|0688|MC|A |006|C1|0|C|000016
One of the most important communications between the nursing services and radiology department involves:

a. planning meetings.
b. patient transfer.
c. scheduling.
d. administering medication.

*|IL017T|IL|0688|MC|A |006|C1|0|B|000017
When sequencing multiple diagnostic studies, the diagnostic study that is scheduled first is:

a. upper GI series.
b. radiographic exam without contrast.
c. laboratory studies for iodine uptake.
d. lower GI series.

*|IL017T|IL|0688|MC|A |007|C1|0|B|000018
When a patient does not arrive for a scheduled examination, the examination should be rescheduled or:

a. extended.
b. cancelled.
c. postponed.
d. left on log.

*|IL017T|IL|0688|MC|A |007|C1|0|D|000019
The status of a patient is either in-patient or:

a. in-transit.
b. cancelled.
c. scheduled.
d. out-patient.

*|IL017T|IL|0688|MC|A |008|C1|0|B|000020
Detailed directions of implementation of a policy are called:

a. general principles.
b. procedures.
c. administration.
d. implementation.

*|IL017T|IL|0688|MC|A |008|C1|0|B|000021
Which of the following is a specialized area of radiologic technology?

a. dental radiology
b. computed tomography
c. magnetic resonance
d. radiation therapy

*|IL017T|IL|0688|MC|A |009|C1|0|C|000022
Pretest and posttest procedure sheets should be reviewed by physicians and:

a. hospital administrators.
b. board of directors.
c. incumbent technologists.
d. patients.

*|IL017T|IL|0688|MC|A |009|C1|0|C|000023
All of the following information would appear on a procedure sheet EXCEPT:

a. steps to follow.
b. dangers or cautions.
c. cost of procedure.
d. rules and regulations.

*|IL017T|IL|0688|MC|A |010|C1|0|A|000024
Instructions/directions given to patient to follow prior to examination are called:

a. pretest information.
b. posttest information.
c. health warning information.
d. procedural information.

*|IL017T|IL|0688|MC|A |010|C1|0|B|000025
Instructions/directions given to the patient to following an examination are called:

a. pretest information.
b. posttest information.
c. health warning information.
d. procedural information.

*|IL017T|IL|0688|MC|A |011|C1|0|A|000026
Clinical information provided to the physician includes:

a. patient's name and identification number.
b. test results.
c. technologist's name.
d. radiographs from exam.

*|IL017T|IL|0688|MC|A |011|C1|0|D|000027
Test reports and forms submitted for a physician's review would include:

a. examination room numbers.
b. performing technologist.
c. equipment identification number.
d. test results.

*|IL017T|IL|0688|MC|A |012|C1|0|D|000028
A program that deals with the techniques used in the monitoring and maintenance of the technical elements of the system that affects the quality of the image is called:

a. quality assurance.
b. efficiency control.
c. diagnostic assurance.
d. quality control.

*|IL017T|IL|0688|MC|A |012|C1|0|A|000029
A program which encompasses the total picture of radiographic care delivery with its primary objective being the enhancement of patient care is termed:

a. quality assurance.
b. quality control.
c. efficiency control.
d. diagnostic assurance.

*|IL017T|IL|0688|MC|A |012|C1|0|B|000030
Follow-up on patient diagnosis is done as part of what program?

a. quality control
b. quality assurance
c. efficiency control
d. diagnostic assurance

*|IL017T|IL|0688|MC|A |012|C1|0|C|000031
The term "diagnosis" means:

a. untrue shape of image.
b. dilation stage of the heart.
c. distinguishing one disease from another.
d. to turn away from.

*|IL017T|IL|0688|MC|A |013|C1|0|B|000032
According to the NCRP, what percentage of dose in excess can an employee (under 18 years of age) be permitted to receive over an older radiation worker's in any calendar quarter?

a. 1
b. 10
c. 25
d. 50

*|IL017T|IL|0688|MC|A |013|C1|0|C|000033
The NCRP dose limit recommendation for the forearms of a radiation worker is stated:

a. 5 rem/yr.
b. 15 rem/yr.
c. 30 rem/yr.
d. 75 rem/yr.

*|IL017T|IL|0688|MC|A |013|C2|0|D|000034
A technologist is exposed to 1 rad from beta particles, 1 rad from alpha particles, and 1 rad from fast neurons. What is the technologist's total exposure?

a. 3 rems
b. 13 rems
c. 23 rems
d. 31 rems

*|IL017T|IL|0688|MC|A |013|C1|0|B|000035
The prospective annual limit for whole body occupational exposure to radiation workers is stated:

a. 1 rem per year.
b. 5 rem per year.
c. 15 rem per year.
d. 25 rem per year.

*|IL017T|IL|0688|MC|A |013|C1|0|C|000036
Film badges are capable of measuring radiation doses what range?

a. 5 mR to 50 mR
b. 50 mR to 500 mR
c. 50 mR to 500 r
d. 5 r to 500 r

*|IL017T|IL|0688|MC|A |013|C1|0|C|000037
The formula, rad times the quality factor, can be used to describe the:

a. curie.
b. roentgen.
c. rem.
d. RBE.

*|IL017T|IL|0688|MC|A |013|C1|0|D|000038
The MAXIMUM period of time that a TLD may be worn as a personnel monitoring device is:

a. one hour.
b. three weeks.
c. one month.
d. three months.

*|IL017T|IL|0688|MC|A |013|C1|0|A|000039
The term used to define radiation exposure is:

a. roentgen.
b. rad.
c. rem.
d. RBE.

*|IL017T|IL|0688|MC|A |013|C1|0|D|000040
A material that might be used in a thermoluminescent dosimeter is:

a. calcium carbonate.
b. calcium chloride.
c. calcium phosphate.
d. calcium fluoride.

*|IL017T|IL|0688|MC|A |013|C1|0|D|000041
The maximum permissible dose of radiation to an individual is:

a. 0.01 rems/year.
b. 0.05 rems/year.
c. 0.1 rems/year.
d. 0.5 rems/year.

*|IL017T|IL|0688|MC|A |013|C1|0|B|000042
The GREATEST source of occupational exposure to the radiologic technologist is:

a. remnant radiation.
b. scattered radiation from patient.
c. primary radiation beam.
d. therapeutic radiation devices.

*|IL017T|IL|0688|MC|A |013|C1|0|B|000043
The monitoring device that is MOST effective for large areas of exposure is called:

a. TLD
b. pocket dosimeter
c. film badge
d. finger badge

*|IL017T|IL|0688|MC|A |014|C1|0|A|000044
Radiation accidents must be reported to:

a. NRC.
b. OSHA.
c. JCAH.
d. FDA.

*|IL017T|IL|0688|MC|A |014|C1|0|B|000045
JCAH is the abbreviation for:

a. Joint Commission on Allied Health.
b. Joint Commission on Accreditation of Hospitals.
c. Joint Commission on Animal Health.
d. Joint Committee on Activity Hazards.

*|IL017T|IL|0688|MC|A |014|C1|0|A|000046
The specific requirements of the Nuclear Regulatory Commission for radiation protection are listed in the Federal Register,

a. Title 10, part 20.
b. Title 10, part 22.
c. Title 10, part 31.
d. Title 11, part 29.

*|IL017T|IL|0688|MC|A |015|C1|0|C|000047
A radiographic equipment check would include:

a. precision pipettes.
b. transducer.
c. cine projector.
d. dose calibrator.

*|IL017T|IL|0688|MC|A |015|C1|0|A|000048
A nuclear medicine equipment check would include:

a. dose calibrator.
b. test object.
c. transducer.
d. radiographic monitor.

*|IL017T|IL|0688|MC|A |015|C1|0|A|000049
kVp stability or accuracy is tested by the:

a. Wisconsin Test Cassette.
b. wire mesh tester.
c. star tester.
d. line pair tester.

*|IL017T|IL|0688|MC|A |016|C1|0|C|000050
Interrelating agencies' requests should be processed:

a. as soon as it arrived.
b. STAT.
c. ASAP.
d. at the end of the day.

*|IL017T|IL|0688|MC|A |016|C1|0|B|000051
When answering the departmental telephone, the polite introduction would be:

a. "Yea, can I help you."
b. "Hello, Radiology Department, may I help you?"
c. "Radiology, what can I do for you?"
d. "Hello, how can I help you?"

*|IL017T|IL|0688|MC|A |017|C1|0|A|000052
A radiology orientation checklist would include:

a. has read the departmental policy/procedure manual.
b. knows starting and quitting time.
c. has scheduled vacation.
d. has purchased new uniforms.

*|IL017T|IL|0688|MC|A |017|C1|0|C|000053
Which of the following would not be discussed at the employee first day orientation?

a. pay rates and check location
b. time cards and clock locations
c. vacation time and amounts
d. introductions to other employee's

*|IL017T|IL|0688|MC|A |018|C1|0|C|000054
An employee evaluation form must be signed by the employer and the:

a. board of directors.
b. administrator.
c. employee.
d. labor union representative.

*|IL017T|IL|0688|MC|A |018|C1|0|D|000055
Which of the following is a method of an employee assessment program?

a. salary
b. orientation
c. communications
d. productivity

*|IL017T|IL|0688|MC|A |019|C1|0|D|000056
Basic radiation protection criteria are found in NCRP Report Number:

a. 29.
b. 31.
c. 34.
d. 39.

*|IL017T|IL|0688|MC|A |019|C1|0|B|000057
The radiation dose limit recommended by the NCRP for the general public is stated as:

a. 0.1 rem/year.
b. 0.5 rem/year.
c. 1.0 rem/year.
d. 5.0 rem/year.

*|IL017T|IL|0688|MC|A |019|C1|0|C|000058
NCRP recommends that persons employed as full-time radiation workers should be:

a. 16 years or older.
b. 17 years or older.
c. 18 years or older.
d. 19 years or older.

*|IL017T|IL|0688|MC|A |019|C1|0|C|000059
According to federal regulations, the RECOMMENDED thickness of lead aprons and gloves for radiation workers is:

a. 1 mm Pb equivalant.
b. 0.25 mm Pb equivalant.
c. 0.5 mm Pb equivalant.
d. 0.75 mm Pb equivalant.

*|IL017T|IL|0688|MC|A |019|C1|0|D|000060
Personnel monitoring records must be continuously maintained and preserved until:

a. two years after termination of employment.
b. seven years after termination of employment.
c. transferred to an employee's next place of employment.
d. the NRC authorizes their disposition.

*|IL017T|IL|0688|MC|A |019|C1|0|D|000061
The NRC generally issues a license for:

a. 2 years
b. 3 years
c. 4 years
d. 5 years

*|IL017T|IL|0688|MC|A |019|C1|0|B|000062
Occupational Safety and Health Act 29CFR1910.96n, and Title 10 of the Code of Federal Regulations, 10CFR19.13, and 10CFR20.01 require that:

a. infractions of CFR rules be reported to the radiation safety officer.
b. personnel be advised of their radiation exposure.
c. radioactive materials be stored, transferred and used in accordance with a set of standards.
d. the user of radionuclides apply for a state license from the NRC.

*|IL017T|IL|0688|MC|A |019|C1|0|D|000063
The concept of maximum permissible dose was established by the:

a. Atomic Energy Commission.
b. Nuclear Regulatory Commission.
c. Food and Drug Administration.
d. National Council on Radiation Protection and Measurements.

*|IL017T|IL|0688|MC|A |020|C1|0|B|000064
Information required to complete a supply purchase requisition includes:

a. supply name.
b. vendor name.
c. count number.
d. cost of supplies.

*|IL017T|IL|0688|MC|A |020|C1|0|A|000065
Information recorded on an inventory form includes:

a. supply name/number.
b. total cost.
c. vendor name.
d. supply identification invoice.

*|IL017T|IL|0688|MC|A |021|C1|0|D|000066
Pharmaceutical drugs are distributed to in-patients by which staff member?:

a. technologist
b. department supervisor
c. president
d. department of nursing

*|IL017T|IL|0688|MC|A |021|C1|0|A|000067
Packages of medication that may be dispensed to the patient in specific doses are:

a. unit-dose.
b. specific-dose.
c. individual-dose.
d. control-dose.

*|IL017T|IL|0688|MC|A |022|C1|0|B|000068
Non-drug materials/supplies should be inventoried:

a. daily.
b. weekly.
c. monthly.
d. yearly.

*|IL017T|IL|0688|MC|A |022|C1|0|C|000069
Non-drug materials/supplies would be:

a. radionuclides.
b. source standards.
c. gauze pads.
d. prescription drugs.

*|IL017T|IL|0688|MC|A |023|C1|0|D|000070
Inventoried radionuclides should be labelled with the time and:

a. date.
b. preparer.
c. lab number.
d. actual activity.

*|IL017T|IL|0688|MC|A |023|C1|0|D|000071
OHSA requires that a pre- and post-inventory of radionuclides be checked:

a. daily.
b. weekly.
c. monthly.
d. after every patient.

*|IL017T|IL|0688|MC|A |024|C1|0|D|000072
The BEST protection from a radiation source is:

a. 1/32 inch of lead.
b. 18 inches of concrete.
c. limited exposure time.
d. distance.

*|IL017T|IL|0688|MC|A |024|C1|0|C|000073
Radiation shielding of radioactive sources are designed to reduce the exposure to the level of:

a. 2mR.
b. 50 mR per day.
c. less than 100 mR per week.
d. no more than 200 mR per month.

*|IL017T|IL|0688|MC|A |025|C1|0|C|000074
An equipment purchase request should be submitted to the:

a. vendor.
b. purchasing department.
c. department supervisor.
d. board of directors.

*|IL017T|IL|0688|MC|A |025|C1|0|B|000075
All equipment purchase request forms MUST include:

a. model/serial number.
b. authorization signature.
c. equipment life.
d. supplies needed.

*|IL017T|IL|0688|MC|A |026|C1|0|D|000076
All of the following are considered equipment identification information EXCEPT:

a. equipment name.
b. model/serial number.
c. description.
d. monetary value.

*|IL017T|IL|0688|MC|A |026|C1|0|D|000077
Of the following, which item is considered equipment inventory information?

a. equipment name
b. model/serial number
c. description
d. monetary value

*|IL017T|IL|0688|MC|A |027|C1|0|B|000078
A patient who is checked into a bed at the hospital is called:

a. an out-patient.
b. an in-patient.
c. a temporary patient.
d. a permanent patient.

*|IL017T|IL|0688|MC|A |027|C1|0|C|000079
A patient's status can be classified as in-patient or:

a. temporary patient.
b. permanent patient.
c. out-patient.
d. mobil.

*|IL017T|IL|0688|MC|A |027|C1|0|A|000080
Wheelchairs or stretchers must be provided to in-patients and:

a. immobile out-patients.
b. temporary patients.
c. sick patients.
d. permanent patients.

*|IL017T|IL|0688|MC|A |028|C1|0|A|000081
To keep records current, ALL medical history entries should be:

a. signed and dated.
b. erased when new entries are made.
c. signed by a technologist.
d. extensive (as much information as possible).

*|IL017T|IL|0688|MC|A |028|C1|0|D|000082
Which of the following would NOT be considered medical history?

a. physician's name
b. allergies
c. patient identification number
d. physician's address and phone number

*|IL017T|IL|0688|MC|A |029|C1|0|C|000083
All permission forms MUST be signed prior to:

a. entering the department.
b. entering the examination room.
c. the beginning of examination.
d. the end of examination.

*|IL017T|IL|0688|MC|A |029|C1|0|A|000084
Of the following, who is NOT protected by a patient permission form?

a. patient
b. technologist
c. department supervisor
d. institution (hospital, clinic, etc.)

*|IL017T|IL|0688|MC|A |030|C1|0|B|000085
Patient preparations that are made prior to conducting an examination are called:

a. post preparation.
b. pre-imaging preparations.
c. special procedures.
d. scout examination.

*|IL017T|IL|0688|MC|A |030|C1|0|C|000086
Which of the following would NOT be considered a pre-imaging preparation?

a. enemas
b. catheterization
c. machine warm-up
d. scout films

*|IL017T|IL|0688|MC|A |031|C1|0|A|000087
The term "coracoid process" means:

a. a hooklike projection of the scapula.
b. a bony prominence near the proximal end of the ulna.
c. inflammation of more than one vertebra.
d. dropping of the kidney from normal position.

*|IL017T|IL|0688|MC|A |031|C1|0|B|000088
A radiologic examination is ordered by the:

a. radiographer and the patient.
b. referring physician and the radiologist.
c. radiographer and the radiologist.
d. radiologist and the patient.

*|IL017T|IL|0688|MC|A |032|C1|0|B|000089
The MOST common type of filing label used for patient identification is:

a. gummed.
b. removable (self-adhesive).
c. glued.
d. magnetic.

*|IL017T|IL|0688|MC|A |032|C1|0|A|000090
Which of the following is NOT included on a patient identification label?

a. patient's age
b. patient's name
c. identification number
d. test to be performed

*|IL017T|IL|0688|MC|A |033|C1|0|A|000091
Which of the following is generally NOT found in a patient's record kept by the department?

a. billing information
b. medical history
c. test results
d. personal information

*|IL017T|IL|0688|MC|A |033|C1|0|C|000092
Which of the following would require an update on a patient's file?

a. unrelated death (car accident, etc.)
b. children
c. name change
d. payment problems

*|IL017T|IL|0688|MC|A |034|C1|0|B|000093
Which of the following filing systems are COMMONLY used for filing patient records?

a. numerical
b. alphabetical
c. color code
d. topic area

*|IL017T|IL|0688|MC|A |034|C1|0|D|000094
Which of the following is NOT found in a departmental patient record?

a. patient's name
b. patient's identification
c. patient's medical history
d. patient's billing information

*|IL017T|IL|0688|MC|A |035|C1|0|A|000095
The term used to define the amount of x- or gamma radiation that produces 1 electrostatic unit of charge as a result of interaction in 1 cc of dry air at standard temperature and pressure is the:

a. roentgen.
b. rad.
c. rem.
d. RBE.

*|IL017T|IL|0688|MC|A |035|C1|0|C|000096
What is the primary reason for maintaining a master card file?

a. meet the requirements of law
b. keep secretarial staff busy
c. to find patient's personal information quickly and efficiently
d. keep hospital administration happy

*|IL017T|IL|0688|MC|A |035|C1|0|D|000097
Which of the following is NOT a good reason for maintaining radiologic records?

a. required by law
b. research
c. teaching
d. personal interest

*|IL017T|IL|0688|MC|A |036|C1|0|B|000098
The most commonly used system for arranging index files is:

a. numerical.
b. alphabetical.
c. color code.
d. topic area.

*|IL017T|IL|0688|MC|A |036|C1|0|C|000099
The two primary methods of determining a patient's identification number are serial numbering and:

a. analog numbering.
b. random numbering.
c. digit filing.
d. data collection.

*|IL017T|IL|0688|MC|A |037|C1|0|A|000100
All of the following are dose limits for nonoccupationally exposed individuals EXCEPT:

a. natural radiation.
b. medical radiation.
c. dental radiation.
d. gamma radiation.

*|IL017T|IL|0688|MC|A |037|C1|0|A|000101
MPD is the abbreviation for:

a. maximum permissible dose.
b. minimum penetration depth.
c. maximum penetration depth.
d. microcurie protection dose.

*|IL017T|IL|0688|MC|A |038|C1|0|C|000102
The MOST COMMON filing system used for filing radiographs is:

a. alphabetical.
b. numerical.
c. color code.
d. topic area.

*|IL017T|IL|0688|MC|A |038|C1|0|B|000103
Which of the following would NOT be found in a typical department filing system?

a. correspondence
b. publications
c. policies
d. regulations

*|IL017T|IL|0688|MC|A |039|C1|0|C|000104
All of the following are required on the billing form EXCEPT:

a. examination codes.
b. insurance company.
c. patient's contact person.
d. patient's name and mailing address.

*|IL017T|IL|0688|MC|A |039|C1|0|D|000105
The person responsible for calculating the customer billing charges is:

a. the technologist.
b. the chief technologist.
c. the department supervisor.
d. the billing department.

*|IL017T|IL|0688|MC|A |040|C1|0|B|000106
All departmental meetings should include:

a. refreshments.
b. prepared agenda.
c. 100% attendance.
d. keynote speaker.

*|IL017T|IL|0688|MC|A |040|C1|0|D|000107
Departmental meetings should be scheduled so that:

a. no work time is lost.
b. no personal time is lost.
c. administration is present.
d. it's convenient for the most technologists.

*|IL017T|IL|0688|MC|A |041|C1|0|D|000108
During clinical experience, the technologist MUST supervise the student:

a. at all times they are on site.
b. at all times they are in department.
c. only when student is with a patient.
d. only when student is with a patient or using hospital equipment.

*|IL017T|IL|0688|MC|A |041|C1|0|A|000109
Clinical experience examination sheets should be completed:

a. daily.
b. weekly.
c. after each procedure.
d. at the end of the clinical experience.

*|IL017T|IL|0688|MC|A |042|C1|0|B|000110
Persons under the permissible age for full-time radiation work may be exposed to radiation for training purposes provided that the total dose for 1 year is less than:

a. 0.1 rem.
b. 0.5 rem.
c. 1 rem.
d. 5 rem.

*|IL017T|IL|0688|MC|A |043|C1|0|A|000111
Which of the following is NOT a purpose of a continuing education file?

a. record pregraduation studies
b. record post-graduation studies
c. record professional interests
d. record number of C.E. points

*|IL017T|IL|0688|MC|A |043|C1|0|C|000112
A technologist must receive how many continuing education points every two years?

a. 12
b. 24
c. 36
d. 48

*|IL017T|IL|0688|MC|B |044|C1|0|B|000113
Before transporting a patient, it is essential to verify or match the information on the request form with the:

a. patient's chart.
b. patient's wrist band.
c. nurse's station.
d. verbal confirmation with patient.

*|IL017T|IL|0688|MC|B |044|C1|0|B|000114
When entering and exiting an elevator with a wheelchair, the wheelchair should be:

a. pulled on forward.
b. pulled on backwards.
c. pushed on forwards.
d. pushed on backwards.

*|IL017T|IL|0688|MC|B |045|C1|0|A|000115
How should a patient be transported on a stretcher?

a. feet first with technologist at head of stretcher
b. feet first with technologist at rear of stretcher
c. head first with technologist at head of stretcher
d. head first with technologist at rear of stretcher

*|IL017T|IL|0688|MC|B |045|C1|0|B|000116
When the wheelchair is NOT in motion, the technologist should always:

a. hold on to the chair.
b. lock the brakes.
c. block the wheels.
d. park against the wall.

*|IL017T|IL|0688|MC|B |045|C1|0|D|000117
Which is NOT a recognized method of stretcher-to-table transfer?

a. stretch pole lift
b. draw sheet
c. lift-push
d. push-roll

*|IL017T|IL|0688|MC|B |046|C1|0|A|000118
For a Stenver's position, the petrosa are:

a. placed parallel to the film.
b. at a 45 degree angle with the film.
c. at a 12 degree angle with the film.
d. placed perpendicular to the film.

*|IL017T|IL|0688|MC|B |046|C1|0|A|000119
The two persons responsible for first plotting the characteristic curve were:

a. Hurter-Driffield.
b. Potter-Bucky.
c. Edison-Pupin.
d. Crooks-Roentgen.

*|IL017T|IL|0688|MC|B |047|C1|0|D|000120
The most practical place to measure blood pressure is at the:

a. radial artery.
b. popliteal artery.
c. dorsal pedal artery.
d. brachial artery.

*|IL017T|IL|0688|MC|B |047|C1|0|B|000121
The contracting phase of the heart musculature is called:

a. diastole.
b. systole.
c. syncope.
d. fibrillation.

*|IL017T|IL|0688|MC|B |047|C1|0|B|000122
The term "diastole" means:

a. an encapsulated collection of fluid.
b. dilatation stage of the heart.
c. relating to the heart.
d. a hollow depression in the bone.

*|IL017T|IL|0688|MC|B |048|C1|0|D|000123
The artery normally used for taking the pulse is the:

a. femoral artery.
b. pulmonary artery.
c. brachial artery.
d. radial artery.

*|IL017T|IL|0688|MC|B |048|C1|0|B|000124
Respiration count must be accurate within (+) or (-):

a. 1 breath.
b. 2 breaths.
c. 3 breaths.
d. 4 breaths.

*|IL017T|IL|0688|MC|B |048|C1|0|B|000125
When taking a patient's pulse, the beats are counted for 20 seconds and multipled by a factor of:

a. 2.
b. 3.
c. 4.
d. 5.

*|IL017T|IL|0688|MC|B |049|C1|0|B|000126
The technologist knows the IV needle has entered a vein if the:

a. IV solution begins to flow.
b. blood return in the IV tube is noted.
c. skin begins to bleed.
d. puncture site becomes red with slight swelling.

*|IL017T|IL|0688|MC|B |049|C1|0|D|000127
The procedure by which radiographic films are performed after opaque medium has been injected into a vein is called:

a. urinalysis.
b. stereoscopic radiography.
c. radiation examination.
d. intravenous radiology.

*|IL017T|IL|0688|MC|B |049|C1|0|C|000128
What method is used for a patient who is to receive multiple intravenous infusions?

a. smaller needles
b. butterfly set
c. heparin lock
d. glass syringe

*|IL017T|IL|0688|MC|B |050|C1|0|C|000129
Oxygen flow rate is measured in units of:

a. ft./lbs. per minute.
b. ft./lbs. per second.
c. liters per minute.
d. liters per second.

*|IL017T|IL|0688|MC|B |050|C1|0|C|000130
What must be posted on the door when oxygen is being administered to a patient?

a. Danger Area
b. Beware Hazardous Materials
c. No Smoking
d. Do Not Enter

*|IL017T|IL|0688|MC|B |051|C1|0|C|000131
A light-headed or faint feeling experienced by a patient when sitting up is referred to as orthostatic:

a. hypertension.
b. hysteresis.
c. hypotension.
d. fluctuation.

*|IL017T|IL|0688|MC|B |051|C1|0|D|000132
For a table-to-wheelchair transfer, the wheelchair should be positioned facing the:

a. rear of table, foot rests down.
b. rear of table, foot rests up.
c. head of table, foot rests down.
d. head of table, foot rests up.

*|IL017T|IL|0688|MC|B |052|C1|0|B|000133
The first thing that should be done by the technologist when preparing to transfer a patient from the stretcher to the examination table is to:

a. verify patient's identification.
b. lock the stretcher wheels.
c. drop the safety rails.
d. release safety straps.

*|IL017T|IL|0688|MC|B |052|C1|0|A|000134
The position of the stretcher in a stretcher-to-bed transfer is:

a. parallel to the bed.
b. vertical to the bed.
c. diagonal to the bed.
d. top of the bed.

*|IL017T|IL|0688|MC|B |052|C1|0|C|000135
The type of motion used to move a coherent patient from the stretcher to the examination table is:

a. push-pull.
b. lift-pull.
c. lift-push.
d. lift-roll.

*|IL017T|IL|0688|MC|B |053|C1|0|D|000136
All of the following are methods of immobilization for a pediatric patient EXCEPT:

a. stockinette.
b. circumcision board.
c. pigg-o-stat infant chair.
d. straight jacket.

*|IL017T|IL|0688|MC|B |053|C1|0|B|000137
All of the following are reasons for immobilizing a pediatric patient EXCEPT:

a. prevent injury to patient.
b. to insure good behavior.
c. obtain quality radiograph.
d. to prevent movement during radiography procedures.

*|IL017T|IL|0688|MC|B |054|C1|0|B|000138
A prepped area should be covered with a:

a. bandage.
b. sterile drape.
c. hospital gown.
d. patient's clothing.

*|IL017T|IL|0688|MC|B |054|C1|0|A|000139
Area to be prepared should be scrubbed using:

a. circular motion from center to outside.
b. circular motion from outside to center.
c. up and down motion from center to outside.
d. up and down motion from outside to center.

*|IL017T|IL|0688|MC|B |054|C1|0|C|000140
The thyroid gland is an:

a. exocrine gland.
b. apocrine gland.
c. endocrine gland.
d. adenine gland.

*|IL017T|IL|0688|MC|B |054|C1|0|A|000141
When using a friction scrub to prepare the skin for a special procedure, the technologist should scrub the skin:

a. in a circular motion from the inside out.
b. from the outside inward.
c. in a back-and-forth motion.
d. in an up-and-down motion.

*|IL017T|IL|0688|MC|B |055|C1|0|B|000142
The standard IV set is:

a. 10 drips per minute.
b. 20 drips per minute.
c. 30 drips per minute.
d. 40 drips per minute.

*|IL017T|IL|0688|MC|B |055|C1|0|C|000143
The IV solution should be positioned:

a. 10-15 inches above the injection site.
b. 18-20 inches above the injection site.
c. 10-15 inches below the injection site.
d. 18-20 inches below the injection site.

*|IL017T|IL|0688|MC|B |055|C1|0|C|000144
At a standard IV drip rate the patient will receive how many ml per hour?

a. 20
b. 40
c. 60
d. 80

*|IL017T|IL|0688|MC|B |056|C1|0|C|000145
Which of the following is NOT considered a physical statistic of a patient?

a. height
b. weight
c. race (nationality)
d. vital signs

*|IL017T|IL|0688|MC|B |056|C1|0|A|000146
When measuring a patient's height, the technologist must insure that the patient is:

a. standing straight.
b. wearing shoes.
c. looking down.
d. removed hair pieces.

*|IL017T|IL|0688|MC|B |057|C1|0|D|000147
When a radiologic technologist is instructed to disconnect an IV, the FIRST step is:

a. inform patient.
b. close drip chamber.
c. remove adhsesive holding needle.
d. wash hands thoroughly.

*|IL017T|IL|0688|MC|B |057|A1|0|C|000148
Which of the following is NOT needed to disconnect an IV?

a. scissors
b. sterile 4 x 4 gauze
c. tourniquet
d. adhesive bandages

*|IL017T|IL|0688|MC|B |058|C1|0|A|000149
What precautions must be followed when radiographing a patient with a chest tube in place?

a. Never raise drainage bottle above level of the patient's chest.
b. Drain the drainage bottle before making the exposure.
c. Clamp the tubing on the drainage bottle before making the exposure.
d. Disconnect the tubing from the drainage bottle before making the exposure.

*|IL017T|IL|0688|MC|B |058|C1|0|B|000150
Radiograph density can be increased during chest radiography using a:

a. bow tie filter.
b. trough filter.
c. wedge filter.
d. inherent filter.

*|IL017T|IL|0688|MC|B |058|C1|0|D|000151
Which of the following methods of anesthesia is NOT introduced through or around the spinal canal?

a. caudal
b. epidural
c. saddle block
d. inhalation

*|IL017T|IL|0688|MC|B |059|C1|0|B|000152
The process of destroying pathogens using chemical materials is:

a. cleanliness.
b. disinfection.
c. sterilization.
d. microbial dilution.

*|IL017T|IL|0688|MC|B |059|C1|0|B|000153
When disposing of bandages and dressings, the technologist should ensure that they are placed:

a. in the trash.
b. into waterproof bags.
c. directly in the incinerator.
d. in outside disposal unit immediately.

*|IL017T|IL|0688|MC|B |060|C1|0|B|000154
To ensure the relaxation of the internal urethral sphincter for administration of a catheter, the technologist should have the patient:

a. inhale.
b. exhale.
c. hold breath.
d. suspend respiration.

*|IL017T|IL|0688|MC|B |060|C1|0|A|000155
The drape placed over the pubis and the genital area is called:

a. fenestrated drape.
b. epistaxis drape.
c. isolation drape.
d. nosocomial drape.

*|IL017T|IL|0688|MC|B |061|C1|0|C|000156
All of the following are considered part of the central nervous system EXCEPT the:

a. brain.
b. spinal cord.
c. cranial nerves.
d. medulla oblongata.

*|IL017T|IL|0688|MC|B |062|C1|0|B|000157
The device used for collecting urine from an incapacitated male patient is called a:

a. tubercle.
b. urinal.
c. teridex.
d. prepuco.

*|IL017T|IL|0688|MC|B |062|C1|0|C|000158
A bedpan with radiation contaminated feces should be:

a. thrown away.
b. washed.
c. washed multiple times.
d. sent to NRC for approval.

*|IL017T|IL|0688|MC|B |063|C1|0|A|000159
If a patient begins to aspirate while vomiting, the FIRST thing the technologist should do is:

a. call the supervisor.
b. wipe patient's mouth with kleenex.
c. suction mouth and airway.
d. take patient to the bathroom.

*|IL017T|IL|0688|MC|B |064|C1|0|C|000160
In pregnant women, a sudden onset of faintness, dizziness and nausea when lying flat may be due to:

a. supine hypertension.
b. preeclampsia.
c. supine hypotension.
d. diabetes.

*|IL017T|IL|0688|MC|B |064|C1|0|B|000161
The NCRP-recommended exposure limit to the whole body of an individual over 45 years of age during a life saving emergency is:

a. 50 rems.
b. 100 rems.
c. 150 rems.
d. 200 rems.

*|IL017T|IL|0688|MC|B |064|C1|0|D|000162
The term "medial" means:

a. pertaining to or situated near the stomach.
b. pertaining to the diaphragm; pertaining to the mind.
c. referring to the palm of the hand.
d. being situated or occurring in the middle of the body.

*|IL017T|IL|0688|MC|B |065|C1|0|B|000163
During adult CPR the lower half of the mid-sternum is compressed:

a. 1-2 inches.
b. 1.5-2 inches.
c. 2-2.5 inches.
d. 2-3 inches.

*|IL017T|IL|0688|MC|B |065|C1|0|A|000164
When performing CPR, the head is tilted back to:

a. open airways.
b. check oval cavity.
c. remove obstruction.
d. take pictures.

*|IL017T|IL|0688|MC|B |066|C1|0|B|000165
When performing ventilation for an adult, the number of breaths per minute is:

a. 6.
b. 12.
c. 14.
d. 18.

*|IL017T|IL|0688|MC|B |066|C1|0|B|000166
When performing ventilation for an unconscious infant, the number of shallow breaths per minute is:

a. 10.
b. 20.
c. 30.
d. 40.

*|IL017T|IL|0688|MC|B |067|C1|0|B|000167
A patient must be provided with a wheelchair or stretcher if he is:

a. ambulatory.
b. non-ambulatory.
c. mobil.
d. transitory.

*|IL017T|IL|0688|MC|B |067|C1|0|B|000168
The FIRST thing the technologist should do prior to escorting a patient is to:

a. provide instructions.
b. verify identification.
c. verify location of transfer.
d. secure patient in transportation device.

*|IL017T|IL|0688|MC|B |068|C1|0|C|000169
The basic ABC needs required to sustain and attempt to stabilize patient during adverse reaction to contrast media are:

a. airway, blood, cardiac.
b. airway, breathing, color.
c. airway, breathing, cardiac.
d. ailments, breathing, congestion.

*|IL017T|IL|0688|MC|B |068|C1|0|B|000170
The percent of patients receiving contrast media that experience some type of adverse reaction is:

a. 1 percent.
b. 5 percent.
c. 10 percent.
d. 20 percent.

*|IL017T|IL|0688|MC|B |068|C1|0|C|000171
A severe reaction to contrast media which may result in cardiac arrest is called:

a. neurogenic shock.
b. septic shock.
c. anaphylactic shock.
d. hypovolemic shock.

*|IL017T|IL|0688|MC|B |069|C1|0|A|000172
When inserting internal eye shields, the patient is placed in what position?

a. supine
b. prone
c. upright sitting
d. lateral recumbent

*|IL017T|IL|0688|MC|B |069|C1|0|B|000173
When applying internal eye shields, eye lubrication drops are applied:

a. automatically.
b. by prescription only.
c. at technologist discretion.
d. when air is hot and dry.

*|IL017T|IL|0688|MC|B |070|C1|0|A|000174
The radiation therapy technique which delivers low-intensity radiation over an extended period to a relatively small volume of tissue utilizing an implant or probe is termed:

a. brachytherapy.
b. fractionation.
c. ionization.
d. teletherapy.

*|IL017T|IL|0688|MC|B |070|C1|0|C|000175
The function of a radiopaque probe is to:

a. aid administration of radiation.
b. increase x-radiation to specified area.
c. block x-radiation to specified area.
d. highlight treatment area.

*|IL017T|IL|0688|MC|B |071|C1|0|C|000176
The person allowed to administer prescribed medication is the:

a. ultrasound technologist.
b. radiation therapy technologist.
c. nuclear technologist.
d. x-ray technologist.

*|IL017T|IL|0688|MC|B |071|C1|0|D|000177
Prior to administering any prescribed medication, the technologist must:

a. discard medication cover.
b. record the medication information.
c. take physical statistics of patient.
d. double check medication label and dosage.

*|IL017T|IL|0688|MC|B |072|C1|0|C|000178
The MAIN purpose of informing a patient or family member about a test procedure is to:

a. make conversation.
b. be polite.
c. reassure patient/family member.
d. meet state/federal regulations.

*|IL017T|IL|0688|MC|B |072|C1|0|D|000179
Which of the following is NOT a reason for providing a patient informational brochure?

a. instructions
b. reassurance
c. procedural information
d. test coding and charges

*|IL017T|IL|0688|MC|B |073|C1|0|C|000180
The technologist aspirates an injection needle to insure that there is no:

a. contamination.
b. air.
c. blood.
d. medicine.

*|IL017T|IL|0688|MC|B |073|C1|0|B|000181
When injecting intramuscularly, the needle puncture depth should be approximately:

a. .5-1 inch.
b. 1-1.5 inch.
c. 1.5-2.0 inch.
d. 2.0-2.5 inch.

*|IL017T|IL|0688|MC|C |074|C1|0|C|000182
Examinations that are not routinely performed and require the addition of some foreign material to cause organs and tissues to become visible are called:

a. contrast procedures.
b. background procedures.
c. special procedures.
d. injection procedures.

*|IL017T||0688|MC|C |075|C1|0|A|000183
The PRINCIPAL purpose of the booster circuit for x-ray equipment is to:

a. prolong x-ray tube life by reducing filament temperature until rotor is operated.
b. increase or boost the mA when large patients are radiographed.
c. permit the use of high kVp and short exposure time.
d. increase or boost the rotor speed when high mA is to be used.

*|IL017T|IL|0688|MC|C |075|C1|0|C|000184
Medical asepsis may be defined as:

a. a substance used to destroy pathogenic organisms.
b. destroying pathogens.
c. a practice that reduces the number and spread of microorganisms.
d. a chemical substance produced by a microorganism.

*|IL017T|IL|0688|MC|C |076|C1|0|B|000185
After administering contrast media orally, the technologist should:

a. have patient lie down.
b. observe patient for adverse reaction.
c. give patient lots of water.
d. have patient exercise.

*|IL017T|IL|0688|MC|C |076|C1|0|D|000186
Before administering contrast media, the technologist should routinely check the patient's:

a. blood pressure.
b. temperature.
c. respiration.
d. allergy history.

*|IL017T|IL|0688|MC|C |077|C1|0|A|000187
A patient that is to receive contrast media rectally should be placed in the:

a. Sim's position.
b. Fowler's position.
c. supine position.
d. prone position.

*|IL017T|IL|0688|MC|C |077|C1|0|C|000188
How much liquid does an enema bag normally contain?

a. 100 ml.
b. 500 ml.
c. 1000 ml.
d. 1500 ml.

*|IL017T|IL|0688|MC|C |077|C1|0|C|000189
How many degrees Fahrenheit should contrast media to be administered rectally be warmed?

a. 77-80
b. 87-90
c. 97-100
d. 107-110

*|IL017T|IL|0688|MC|C |078|C1|0|B|000190
When using urinary catheters to administer contrast media, the media is administered until the contents are infused or until the:

a. back flow occurs.
b. patient discomfort is noted.
c. leakage begins.
d. radiographs are obtained.

*|IL017T|IL|0688|MC|C |078|C1|0|C|000191
The loss of contrast media between the patient and the infusion set is controlled by placing a clamp or:

a. Hepburn lock.
b. surgical clip.
c. hemostat.
d. isolette.

*|IL017T|IL|0688|MC|C |079|C1|0|B|000192
The iodide-washout test is used to study patients with a suspected:

a. trapping defect.
b. organification defect.
c. synthesis defect.
d. secretion defect.

*|IL017T|IL|0688|MC|C |079|C1|0|B|000193
The examination performed by intravenous injection of contrast media is:

a. cystourethrography.
b. nephrotomography.
c. retrograde pyelography.
d. renal arteriography.

*|IL017T|IL|0688|MC|C |080|C1|0|A|000194
A contaminated gown should be removed and folded with the:

a. inside-out.
b. outside-in.
c. sleeves tied around gown.
d. sleeves inside-out.

*|IL017T|IL|0688|MC|C |080|C1|0|B|000195
When donning a sterile gown, the technologist should touch only the:

a. outside of gown.
b. inside of gown.
c. sleeves of gown.
d. top edge of gown.

*|IL017T|IL|0688|MC|C |080|C1|0|D|000196
When putting on a sterile cap, the technologist should:

a. go from front to back.
b. go from back to front.
c. avoid touching with hands.
d. insure that all hair is covered.

*|IL017T|IL|0688|MC|C |081|C1|0|A|000197
When washing hands, the type of soap that should NOT be used is:

a. bar.
b. powder.
c. leaf.
d. liquid.

*|IL017T|IL|0688|MC|C |081|C1|0|B|000198
The technologist should always wash his hands:

a. when contaminated.
b. between patients.
c. at beginning of shift.
d. at end of shift.

*|IL017T|IL|0688|MC|C |081|C1|0|C|000199
When washing hands and arms at a sink that lacks foot or knee controls, the water control should be handled using:

a. hands.
b. elbows.
c. paper towels.
d. knee.

*|IL017T|IL|0688|MC|C |082|C1|0|A|000200
Which of the following does not need to be adjusted before making a video tape of the screen display?

a. volume
b. contrast
c. sharpness
d. brightness

*|IL017T|IL|0688|MC|C |082|C1|0|B|000201
Video tapes come in two basic formats beta and:

a. magnetic.
b. VHS.
c. maxa.
d. gamma.

*|IL017T|IL|0688|MC|C |083|C1|0|B|000202
A contaminated urinary catheter is an example of what kind of disease transmission?

a. vectors
b. fomites
c. direct contact
d. airborne contamination

*|IL017T|IL|0688|MC|C |083|C1|0|C|000203
What should be done with the specimen request for analysis?

a. Forward to lab ahead of specimen.
b. Hand deliver request to lab.
c. Tape or rubber band request to specimen container.
d. Give request to department supervisor.

*|IL017T|IL|0688|MC|C |084|C1|0|B|000204
When focal-film distance is decreased, the focal spot size:

a. decreases.
b. increases.
c. varies.
d. pinholes.

*|IL017T|IL|0688|MC|C |084|C1|0|D|000205
The test instrument used to determine focal spot size is the:

a. penetrometer.
b. sensitimeter.
c. densitometer.
d. pinhole camera.

*|IL017T|IL|0688|MC|C |084|C1|0|C|000206
The focal spot size can be determined using a:

a. polaroid camera.
b. 110 mm camera.
c. pinhole camera.
d. scintillation camera.

*|IL017T|IL|0688|MC|C |085|C1|0|B|000207
The ability of an imaging system to form a distinct image of two or more close objects is called:

a. detail.
b. resolution.
c. contrast.
d. sharpness.

*|IL017T|IL|0688|MC|C |085|C1|0|D|000208
The small spot on the target of an x-ray tube from which x-rays are emitted is called the:

a. image spot.
b. hot spot.
c. target spot.
d. focal spot.

*|IL017T|IL|0688|MC|C |085|C1|0|A|000209
The MOST common spot film sizes are width of 100 mm and:

a. 105 mm.
b. 110 mm.
c. 115 mm.
d. 120 mm.

*|IL017T|IL|0688|MC|C |086|C1|0|B|000210
When a spinning top test shows too few dots, it is an indication that the timer is:

a. fast.
b. slow.
c. correct.
d. not working.

*|IL017T|IL|0688|MC|C |086|C1|0|A|000211
In radiographic units, the purpose of a spinning top is to check the accuracy of the:

a. timer.
b. intensifier.
c. generator.
d. x-ray tube.

*|IL017T|IL|0688|MC|C |086|C1|0|B|000212
A spinning top may be used to check the accuracy of the:

a. mA meter.
b. exposure timer.
c. kVp meter.
d. PBL system.

*|IL017T|IL|0688|MC|C |086|C1|0|C|000213
A disk of radiopaque metal about 3 inches in diameter and about 1/8 inch thick is called a:

a. penetrometer.
b. bucky.
c. spinning top.
d. transformer.

*|IL017T|IL|0688|MC|C |087|C1|0|C|000214
The adequacy of collimation for fluoroscopy is measured from:

a. the table top or entrance to patient.
b. 12 inches above the table top.
c. 14 inches above the table top.
d. 15 inches above the table top.

*|IL017T|IL|0688|MC|C |087|C1|0|A|000215
The target focal area of a rotating anode that is acted upon by electron interactions during an exposure is known as the:

a. focal track.
b. interim target.
c. effective focal spot.
d. fractional focal spot.

*|IL017T|IL|0688|MC|C |087|C1|0|B|000216
For portable fluoroscopic x-ray units, the minimum focal-to-patient distance must be at least:

a. 10 inches.
b. 12 inches.
c. 15 inches.
d. 18 inches.

*|IL017T|IL|0688|MC|C |087|C1|0|A|000217
As the temperature of a room increases, the speed of the film:

a. increases.
b. decreases.
c. remains the same.
d. is not affected.

*|IL017T|IL|0688|MC|C |088|C1|0|A|000218
The percentage of density attributed to direct x-ray exposure on a radiograph utilizing intensity screens is:

a. 2 percent.
b. 10 percent.
c. 50 percent.
d. 98 percent.

*|IL017T|IL|0688|MC|C |088|C1|0|B|000219
What effect will increasing screen active layer thickness have in speed and detail respectively?

a. increase, increase
b. increase, decrease
c. decrease, increase
d. decrease, decrease

*|IL017T|IL|0688|MC|C |088|C1|0|B|000220
As the wavelength of x-rays increases, the frequency:

a. increases.
b. decreases.
c. diversifies.
d. stays constant.

*|IL017T|IL|0688|MC|C |089|C2|0|C|000221
A chest radiograph was taken upright with a 12:1 focused grid. The radiograph exhibit's grid cutoff and a 2-inch area bilaterally at the periphery appears underexposed. The problem is due to:

a. off-center grid.
b. upside-down grid.
c. improper FFD.
d. patient motion.

*|IL017T|IL|0688|MC|C |089|C2|0|C|000222
The term which refers to the path of radiation and describes the area of its entrance/exit is:

a. view.
b. position.
c. projection.
d. method.

*|IL017T|IL|0688|MC|C |090|C1|0|C|000223
When handling films, hands should be:

a. clean and rubbed dry with cream.
b. covered by rubber gloves.
c. clean and dry.
d. slightly moistened with water to avoid static.

*|IL017T|IL|0688|MC|C |090|C1|0|A|000224
Another name for an illuminatior is a:

a. viewbox.
b. quadrate box.
c. echo box.
d. radiograph box.

*|IL017T|IL|0688|MC|C |090|C1|0|D|000225
The purpose of an illuminator is to provide an instrument upon which radiographs can be:

a. duplicated.
b. altered.
c. modified.
d. reviewed.

*|IL017T|IL|0688|MC|C |091|C1|0|A|000226
When cleaning the needle insertion site, the skin is swabbed by using a circular motion moving from the:

a. inside to the outside.
b. outside to the inside.
c. top to bottom.
d. bottom to top.

*|IL017T|IL|0688|MC|C |091|C1|0|C|000227
The FIRST thing a technologist should do when drawing a blood sample is to:

a. apply tourniquet.
b. clean insertion sign.
c. obtain patient's permission.
d. insert needle.

*|IL017T|IL|0688|MC|C |092|C1|0|D|000228
Before lowering scan camera head, the flood source should be checked for:

a. adequate liquid.
b. smudges.
c. scratches.
d. air bubble.

*|IL017T|IL|0688|MC|C |092|C1|0|A|000229
The type of flood source used on a scan camera is:

a. cobalt.
b. stable.
c. neutral.
d. solid.

*|IL017T|IL|0688|MC|C |092|C1|0|A|000230
In order to maintain a constant film density if the distance is tripled, the exposure (mAs) must be:

a. multiplied by 9.
b. multiplied by 3.
c. divided by 9.
d. divided by 3.

*|IL017T|IL|0688|MC|C |093|C1|0|B|000231
Any prescription drugs remaining in the examination room after the completion of an exam are:

a. put on a special procedure tray.
b. put in a locking supply cabinet.
c. stored with non-prescription drugs.
d. disposed of properly.

*|IL017T|IL|0688|MC|C |093|C1|0|C|000232
Which of the following is NOT considered a non-prescription drug?

a. linens
b. cotton swabs
c. contrast media
d. 70% alcohol

*|IL017T|IL|0688|MC|C |094|C1|0|D|000233
"Diapositive" is a term used when referring to:

a. tomography.
b. mammography.
c. xeroradiography.
d. subtraction.

*|IL017T|IL|0688|MC|C |094|C1|0|A|000234
Direct positive film can be solarized by:

a. chemicals.
b. air movement.
c. a curing process.
d. development.

*|IL017T|IL|0688|MC|C |095|C1|0|D|000235
The image on a radiographic film after development is known as the:

a. latent image.
b. developed image.
c. archival image.
d. manifest image.

*|IL017T|IL|0688|MC|C |095|C1|0|A|000236
Radiographs exiting the processor "wet and tacky" with adequate dryer temperature is a result of:

a. inadequate wash.
b. high developer temperature.
c. contaminated developer.
d. contaminated diluted fixer.

*|IL017T|IL|0688|MC|C |095|C1|0|C|000237
The visible image on the radiograph is composed of:

a. sodium carbonate crystals.
b. potassium bromide crystals.
c. black metallic silver grains.
d. unexposed silver bromide crystals in gelatin.

*|IL017T|IL|0688|MC|C |095|C1|0|C|000238
The "activator":

a. hardens the emulsion.
b. oxidizes the solution in the developer.
c. is sodium carbonate.
d. prepares the film.

*|IL017T|IL|0688|MC|C |095|C1|0|C|000239
The oxidized preservative in an automatic film processor is called:

a. sodium sulfite.
b. sodium cabonate.
c. sodium sulfate.
d. sodium thiosulfate.

*|IL017T|IL|0688|MC|C |095|C1|0|D|000240
In radiographic film emulsion, 90% of the silver halide crystals are:

a. silver nitrate.
b. silver iodide.
c. silver nitrite.
d. silver bromide.

*|IL017T|IL|0688|MC|C |096|C1|0|B|000241
The smallest distance between two recognizable images in a radiograph is called:

a. magnification.
b. resolution.
c. latitude.
d. density.

*|IL017T|IL|0688|MC|C |096|C1|0|B|000242
The purpose of duplicating a radiograph is to obtain a:

a. negative copy.
b. positive copy.
c. darker copy.
d. lighter copy.

*|IL017T|IL|0688|MC|C |096|C1|0|C|000243
A single-coated film used to produce a direct positive copy of a finished radiograph is called:

a. subtraction.
b. dosimeter.
c. duplication.
d. photoradiographic.

*|IL017T|IL|0688|MC|C |097|C1|0|C|000244
The man responsible for discovering the chemical now used in the intensifying screens was:

a. Potter.
b. Bucky.
c. Thomas Edison.
d. Pupin.

*|IL017T|IL|0688|MC|C |097|C1|0|A|000245
As room temperature rises, the speed of an intensifying screen:

a. decreases.
b. remains the same.
c. increases.
d. has no effect.

*|IL017T|IL|0688|MC|C |097|C1|0|D|000246
The range of brightness gain for modern image intensifiers is:

a. 15-30.
b. 300-500.
c. 950-1000.
d. 5000-20,000.

*|IL017T|IL|0688|MC|C |098|C1|0|C|000247
The inability of the chemicals to react in the proper way because of the rate of oxidation of the solution, number of film processed, and contamination in the solution, is referred to as:

a. reversal.
b. agitation.
c. exhaustion.
d. variations.

*|IL017T|IL|0688|MC|C |098|C1|0|B|000248
The rate of development of the radiographic film is dependent upon the:

a. amount of solution.
b. temperature of solution.
c. density of solution.
d. kind of solution.

*|IL017T|IL|0688|MC|C |098|C1|0|D|000249
What effect will overdeveloping have if a radiograph film is underexposed?

a. increase contrast
b. decrease density
c. darken image
d. none at all

*|IL017T|IL|0688|MC|C |099|C1|0|D|000250
X-ray film is packed in metal foil and paper wrapping to protect it from:

a. mechanical exposure.
b. thumb prints.
c. developing solution.
d. light and moisture.

*|IL017T|IL|0688|MC|C |099|C1|0|A|000251
If commercial cleaners are not available, film cassettes can be cleaned using water and:

a. ivory soap.
b. alcohol.
c. comet.
d. granular soap.

*|IL017T|IL|0688|MC|C |099|C1|0|B|000252
A light-tight film holder, usually containing a pair of intesifying screens used in radiography is called:

a. compensator.
b. cassette.
c. cardboard holder.
d. capacitor.

*|IL017T|IL|0688|MC|C |100|C1|0|D|000253
A light used in a darkroom to which films may be exposed without fog is called:

a. whitelight.
b. secondary light.
c. red light.
d. safelight.

*|IL017T|IL|0688|MC|C |100|C1|0|B|000254
The film exposure settings when performing a safelight test should be:

a. .5 MaS, 60kv, 30 FFD.
b. 1 MaS, 60kv, 40 FFD.
c. 1 MaS, 50kv, 40 FFD.
d. 2 MaS, 50kv, 30 FFD.

*|IL017T|IL|0688|MC|C |100|C1|0|B|000255
To prevent light fog, the darkroom must be free of:

a. red.
b. white.
c. ultraviolet.
d. blacklight.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000256
The region of impurity of fault within a silver halide crystal that traps electrons is known as the:

a. silver imperfection.
b. sensitivity speck.
c. silver speck.
d. crystal defect.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000257
When manually processing a radiograph, the purpose of the rinse is to:

a. harden the emulsion.
b. neutralize the developer.
c. remove wrinkles from radiograph.
d. fix the chemical carrier.

*|IL017T|IL|0688|MC|C |101|C1|0|D|000258
"Crinkle marks" are caused by:

a. static electricity.
b. high humidity.
c. low humidity.
d. wrinkled or bent film.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000259
The crescent, or moon-shaped areas on an x-ray film are caused by:

a. static.
b. bending the film before or after exposure.
c. excessive heat.
d. irradiation leak in the x-ray unit

*|IL017T|IL|0688|MC|C |101|C1|0|A|000260
Photographic papers are not used in medical radiography because:

a. the maximum density is less than film transparencies.
b. the maximum density is equal to film but is harder to process.
c. the film is less expensive.
d. one could not use a high intensity spot light with paper.

*|IL017T|IL|0688|MC|C |101|C1|0|D|000261
Sodium carbonate is present in:

a. film emulsion.
b. fixing solution.
c. intensifying screen.
d. developing solution.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000262
Over-replenishment of the developer will result in:

a. increased contrast.
b. decreased contrast.
c. improved recorded detail.
d. decreased density.

*|IL017T|IL|0688|MC|C |101|C1|0|D|000263
The visible image on the radiograph is composed of:

a. unexposed silver bromide.
b. sodium carbonate crystals.
c. potassium bromide crystals.
d. black metallic silver grains.

*|IL017T|IL|0688|MC|C |101|C2|0|A|000264
In conventional processing, if the clearing time of fresh solution is one and one-half minutes, the minimum of time for complete fixation should be:

a. 3 minutes.
b. 5 minutes.
c. 6 minutes.
d. 10 minutes.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000265
The essential ingredients of the fixer are:

a. preservative, reducer, hardener, acid.
b. acid, hardener, hypo, preservative.
c. tanning agent, accelerator, reducer, preservative.
d. alkali, preservative, reducer, restrainer.

*|IL017T|IL|0688|MC|C |101|C1|0|B|000266
The chemical found in both developer and fixer processing chemistry that functions as a preservative is:

a. hydroquinone.
b. sodium sulfite.
c. sodium carbonate.
d. potassium bromide.

*|IL017T|IL|0688|MC|C |101|C1|0|D|000267
The rinse bath does NOT:

a. neutralize the developer.
b. remove chemicals carried over from the developer.
c. remove the oxidation products of development.
d. harden the emulsion.

*|IL017T|IL|0688|MC|C |101|C1|0|C|000268
A modern x-ray film base is made of:

a. gelatin.
b. cellophane.
c. polyester.
d. nitro cellulose.

*|IL017T|IL|0688|MC|C |102|C1|0|C|000269
Photographs of patient's treatment area are usually made using a:

a. 35 mm camera.
b. 110 instamatic camera.
c. Polaroid camera.
d. scintillation camera.

*|IL017T|IL|0688|MC|C |102|C1|0|D|000270
The MAIN purpose for photographing the patient's treatment area is to:

a. show patient the need for treatment.
b. aid in the treatment planning.
c. fulfill legal obligations.
d. provide permanent record of treatment.

*|IL017T|IL|0688|MC|C |103|C1|0|D|000271
Body secretions on linens such as mucus, vomitus, urine or feces should be handled as:

a. stains.
b. disposable items.
c. biological samples.
d. dangerous fomites.

*|IL017T|IL|0688|MC|C |103|C1|0|C|000272
Counters and surfaces contacted by personnel who handle patients should be wiped down with vesphene germicide:

a. once daily.
b. twice daily.
c. once weekly.
d. twice weekly.

*|IL017T|IL|0688|MC|C |103|C1|0|B|000273
Counters and surfaces contacted by personnel who handle patients should be wiped down with 70% isopropyl alcohol:

a. once daily.
b. twice daily.
c. once weekly.
d. twice weekly.

*|IL017T|IL|0688|MC|C |103|C1|0|C|000274
Items which are designed to be used once and then discarded are called:

a. useable.
b. recyclable
c. disposable.
d. incidental.

*|IL017T|IL|0688|MC|C |104|C1|0|C|000275
In radiation therapy, determining exposure at various points in order to insure uniform irradiation is called:

a. technique guides.
b. depth dose guides.
c. isodose curves.
d. treatment charts.

*|IL017T|IL|0688|MC|C |104|C1|0|C|000276
The term "anterior" means:

a. top part of the body.
b. back part of the body.
c. front part of the body.
d. bottom part of the body.

*|IL017T|IL|0688|MC|C |104|C1|0|A|000277
Wedge filters for use in high-voltage vary in angle from:

a. 15 to 60 degrees.
b. 15 to 75 degrees.
c. 30 to 60 degrees.
d. 30 to 75 degrees.

*|IL017T|IL|0688|MC|C |104|C1|0|A|000278
The percent of the radiation that can be transmitted outside the useful beam when using a collimating device on a cobalt 60 unit is:

a. 5 percent.
b. 6 percent.
c. 7 percent.
d. 8 percent.

*|IL017T|IL|0688|MC|C |104|C1|0|D|000279
The MINIMUM wavelength in an x-ray beam depends on the:

a. HVL.
b. tube current.
c. source-image distance.
d. peak kilovoltage.

*|IL017T|IL|0688|MC|C |105|C1|0|B|000280
The level of the axis of rotation which is considered parallel with the tabletop is called:

a. lateral plane .
b. focal plane.
c. coronal plane.
d. midsagittal plane.

*|IL017T|IL|0688|MC|C |105|C1|0|C|000281
The tomographic technique used to demonstrate relatively thick sections or zones of tissue is called:

a. cholangiography.
b. aortography.
c. zonography.
d. bronchography.

*|IL017T|IL|0688|MC|C |106|C1|0|B|000282
The LEAST accurate of the timers listed below is:

a. synchronous.
b. mechanical.
c. electronic.
d. mAs.

*|IL017T|IL|0688|MC|C |106|C1|0|B|000283
The numbers of rectifiers required for full wave, single phase generation is:

a. 12.
b. 4.
c. 6.
d. 5.

*|IL017T|IL|0688|MC|C |107|C1|0|C|000284
Photoradiographic film is:

a. double coated film.
b. red sensitive film.
c. single coated film.
d. screen film.

*|IL017T|IL|0688|MC|C |107|C1|0|A|000285
The cassette is made up of:

a. a radiolucent front.
b. steel or heavy metal frame.
c. lead and a cotton gasket to prevent light leaks.
d. a solid metal front.

*|IL017T|IL|0688|MC|C |107|C1|0|B|000286
Screen film is mainly sensitive to:

a. infrared rays.
b. ultraviolet light.
c. fluorescent light from intensifying screens.
d. direct action of x-rays.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000287
To show the articular facets of the lumbar spine, the best position to use is the:

a. oblique.
b. lateral.
c. anterior.
d. posterior.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000288
The semiaxial projection, Chassard-Lapine position demonstrates all of the following EXCEPT:

a. pelvis.
b. relationship of femoral heads.
c. acetabula.
d. optic foramen.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000289
The Stenver's position is used in making radiographs of the:

a. sphenoid sinuses.
b. pars petrosa.
c. maxillary sinuses.
d. sella.

*|IL017T|IL|0688|MC|C |108|C1|0|C|000290
If one wanted to show the frontal horns of the lateral ventricles, the patient would be placed in the:

a. brow-down position.
b. lateral position.
c. brow-up position.
d. head-hanging position.

*|IL017T|IL|0688|MC|C |108|C1|0|C|000291
The view used to demonstrate forward or backward displacement in fractures of the metacarpals is the:

a. hand.
b. wrist.
c. hand in flexion.
d. hand in extension.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000292
In making a PA radiograph of the abdomen, the patient is in the:

a. prone position.
b. abducted position.
c. supine position.
d. lateral recumbent position.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000293
Three projections are usually taken when there is a question of acute abdominal pain. They are recumbent anteroposterior, lateral and:

a. anteroposterior inverted view.
b. lateral inverted view.
c. lateral erect view.
d. anteroposterior erect view.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000294
In taking a PA radiograph of the distal radius and ulna, the hand is placed in:

a. the lordotic position.
b. flexion.
c. supination.
d. pronation.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000295
To BEST visualize the ribs below the diaphragm, the patient must be instructed to:

a. take a deep breath and hold it.
b. exhale fully and hold it.
c. just suspend normal respiration.
d. breathe normally.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000296
In the supine position, the lumbosacral articulation is usually located near the:

a. iliac crest.
b. symphysis pubis.
c. anterior-superior iliac spine.
d. umbilicus.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000297
A fracture of the zygomatic arch can BEST be shown:

a. posterior-anterior view of the skull.
b. submento vertex view of the skull.
c. anterior-posterior view of the skull.
d. parietoacanthial view of the skull.

*|IL017T||0688|MC|C |108|C1|0|B|000298
Semicircular canals are shown in the:

a. Law's position.
b. Stenver's position.
c. Rhese's position.
d. Waters position.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000299
To x-ray the longitudinal arches for "flat feet", the patient would be placed in a:

a. sitting bilateral position.
b. weight bearing position.
c. prone bilateral position.
d. supine bilateral position.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000300
The Friedman position demonstrates the:

a. optic foramen.
b. head-neck trochanters of upper femur.
c. obturator inlet.
d. pelvic inlet.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000301
When examining the trachea in the lateral position, the shoulders must be:

a. rolled backwards.
b. rolled forwards.
c. elevated over the head.
d. held out parallel to the floor.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000302
The Kuchendorf position is taken to demonstrate the:

a. knee.
b. patella.
c. intercondyloid fossa.
d. tibial tuberosity.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000303
When radiographing a lateral forearm, the elbow is flexed:

a. 45 degrees.
b. 90 degrees.
c. 0 degrees.
d. 90 degrees with the thumb side down.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000304
The malleolus is BEST shown in the:

a. foot projection.
b. ankle projection.
c. tibial-fibula projection.
d. knee projection.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000305
When the patient cannot be positioned for the Danelius-Miller position, which of the following positions should be used?

a. Jones
b. Lorenz
c. Leonard-George
d. Johnson

*|IL017T|IL|0688|MC|C |108|C1|0|A|000306
The prime reason the head is rotated away from the side being examined in the posteroanterior projection of the clavicle is to:

a. reduce the part film distance.
b. avoid elongating the clavicles.
c. straighten out the curve in clavicle.
d. provide proper mobilization.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000307
The position that BEST demonstrates the foramen magnum is the:

a. Waters position.
b. Stenver's position.
c. granger position.
d. cranial base position.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000308
If the orbital meatal line is not at least 37 degrees when doing a Waters projection, the outcome would be:

a. a good Waters.
b. the petrous ridges are shown through the maxillary sinuses.
c. distorted view of the orbitus.
d. the teeth will be in the maxillary sinuses.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000309
Another name for the Lawrence position is:

a. glenohumeral joint.
b. projection of the clavicle.
c. position of the humerus.
d. position of the hip.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000310
In radial flexion the wrist is turned:

a. inward, towards the radius.
b. upward.
c. downward.
d. outward, towards the ulna.

*|IL017T|IL|0688|MC|C |108|C1|0|C|000311
Jugular foramen is BEST seen in the:

a. Waters position.
b. Caldwell's position.
c. submento-vertex position.
d. Stenver's position.

*|IL017T|IL|0688|MC|C |108|C1|0|A|000312
In the anteroposterior oblique position of the sacroiliac joint, the affected side is positioned:

a. away from the film.
b. toward the film.
c. parallel to the film.
d. 60 degrees towards the film.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000313
The Johnson position is taken ONLY when:

a. the patient is young.
b. the patient is unable to attain a lateral hip position.
c. in the frog-legs position.
d. lateral femur.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000314
An axial projection of the carpal canal showing the volar aspect of seven (7) bones is commonly called:

a. radial flexion.
b. ulnar flexion.
c. anterion posterion.
d. Gaynor-Hart position.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000315
The Pawlow, twining, and swimmers positions are designed to demonstrate the:

a. atlas, axis.
b. cervicothoracic area.
c. mid thoracic area.
d. lumbosacral region.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000316
A patient positioned on the radiographic table on their left side is said to be in the:

a. prone position.
b. supine position.
c. ventrally recumbent position.
d. laterally recumbent position.

*|IL017T|IL|0688|MC|C |108|C1|0|C|000317
The BEST position to show the articular facets of the lumbar spine is:

a. posterior-anterior.
b. anterior-posterior.
c. oblique.
d. lateral.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000318
The Kite position is taken for:

a. ruling out fracture.
b. club feet.
c. weight bearing.
d. club ankle.

*|IL017T|IL|0688|MC|C |108|C1|0|D|000319
The Lawrence position (axial view) shows the:

a. sternum and ribs.
b. clavicle and neck.
c. ribs and heart.
d. humerus and clavicle.

*|IL017T|IL|0688|MC|C |108|C1|0|B|000320
If a technologist wished to demonstrate the distal tibia, fibula, articulation, the technologist would:

a. rotate the leg laterally.
b. rotate the leg medially.
c. leave it in the PA projection.
d. angle the tube laterally and caudally 15 degrees.

*|IL017T|IL|0688|MC|C |109|C1|0|B|000321
The purpose of the coupling media in ultrasound is to reduce the acoustic impedance of:

a. skin.
b. air.
c. hair.
d. static.

*|IL017T|IL|0688|MC|C |109|C1|0|C|000322
The coupling media MOST commonly used in ultrasound is:

a. water.
b. mineral oil.
c. aqueous gel.
d. patient's skin.

*|IL017T|IL|0688|MC|C |109|C1|0|A|000323
The MOST acoustic impedance is found in:

a. air.
b. water.
c. mineral oil.
d. aqueous oil.

*|IL017T|IL|0688|MC|C |110|C1|0|C|000324
An ultrasound transducer beam can be focused by making the crystal face:

a. flat.
b. convex.
c. concave.
d. larger.

*|IL017T|IL|0688|MC|C |110|C1|0|A|000325
Another name for high-frequency transducers is a:

a. small-parts transducer.
b. large-parts transducer.
c. obstetrics transducer.
d. continuous transducer.

*|IL017T|IL|0688|MC|C |110|C1|0|C|000326
The area of the body with the GREATEST opacity is:

a. bone.
b. fat.
c. tooth enamel.
d. water.

*|IL017T|IL|0688|MC|C |111|C1|0|A|000327
Ultrasound beam attenuation equals:

a. 1 dB per 1 cm per 1 megahertz.
b. 2 dB per 1 cm per 1 megahertz.
c. 1 dB per 2 cm per 1 megahertz.
d. 1 dB per 1 cm per 2 megahertz.

*|IL017T|IL|0688|MC|C |112|C1|0|A|000328
A diagnostic type protective tube housing must reduce the exposure rate at 1 meter by no more than:

a. 0.1 R/hr.
b. 0.5 R/hr.
c. 1.0 R/hr.
d. 100 R/hr.

*|IL017T|IL|0688|MC|C |112|C1|0|C|000329
The relationship between exposure and density is called a:

a. circular curve.
b. hyperbalic curve.
c. characteristic curve.
d. intercepting curve.

*|IL017T|IL|0688|MC|C |112|C1|0|C|000330
The molybdenum focusing cup surrounding the cathode of the x-ray tube has a:

a. neutral charge.
b. positive charge.
c. negative charge.
d. static charge.

*|IL017T|IL|0688|MC|C |112|C1|0|C|000331
Another name for the x-ray tube cathode is the:

a. diode.
b. armature.
c. electron emitter.
d. electron collector.

*|IL017T|IL|0688|MC|C |112|C1|0|D|000332
The easiest and least expensive method of reducing the exposure rate to the permissible level is:

a. lead shielding.
b. concrete shielding.
c. limitation of time of exposure.
d. distance.

*|IL017T|IL|0688|MC|C |113|C1|0|D|000333
The test equipment used when performing a quality assurance test on Sonography scanners is called:

a. a patient.
b. an attenuator.
c. a reflector.
d. a phantom.

*|IL017T|IL|0688|MC|C |114|C1|0|D|000334
The trigonometric equation used to calculate the orientation and position of the transducer is computed by the:

a. technologist.
b. transducer.
c. potentiometer.
d. position monitor.

*|IL017T|IL|0688|MC|C |114|C1|0|A|000335
When performing an ultrasound scan, the transducer is placed:

a. in coupling media.
b. in direct contact with skin.
c. approximately 1/64 inch from skin.
d. to left of area to be scanned.

*|IL017T|IL|0688|MC|C |115|C1|0|B|000336
Any method used to make a permanent record of the displayed ultrasound image is called a:

a. permanent scan.
b. hard copy.
c. bistable storage.
d. transitory image.

*|IL017T|IL|0688|MC|C |116|C1|0|D|000337
The speed of sound to which the ultrasound instrument is calibrated is:

a. 1,480 meters per second.
b. 1,500 meters per second.
c. 1,520 meters per second.
d. 1,540 meters per second.

*|IL017T|IL|0688|MC|C |116|C1|0|A|000338
Calibration of an ultrasound instrument can be checked by scanning along the:

a. top of the AIUM phantom.
b. side of the AIUM phantom.
c. front of the AIUM phantom.
d. bottom of the AIUM phantom.

*|IL017T|IL|0688|MC|C |117|C1|0|B|000339
Reducing the number of pathogenic microorganisms in the environment and intervening in the process by which they spread is called:

a. surgical asepsis.
b. medical asepsis.
c. decontamination.
d. aortography.

*|IL017T|IL|0688|MC|C |118|C1|0|B|000340
In a generator, the pressure of extraction of the absorbed substance from the solid absorbing medium is called:

a. coagulation.
b. elution.
c. attenuation.
d. sequestration.

*|IL017T|IL|0688|MC|C |118|C1|0|D|000341
After eluting the generator, the type of cap placed on a shielded collecting vial is:

a. rubber.
b. aluminum.
c. lead.
d. plastic.

*|IL017T|IL|0688|MC|C |118|C1|0|A|000342
A secondary barrier protects against:

a. scatter and tube leakage.
b. primary radiation from the tube.
c. primary radiation from a therapy unit.
d. there is no such thing as a secondary barrier.

*|IL017T|IL|0688|MC|C |119|C1|0|D|000343
A gelatin is chemically considered:

a. a compound.
b. a mixture.
c. an element.
d. a colloid.

*|IL017T|IL|0688|MC|C |119|C1|0|C|000344
When a 99Mo generator is eluted, the 99mTc is in the form of:

a. TcO5.
b. TcO4+.
c. TcO-4.
d. TcO-3.

*|IL017T|IL|0688|MC|C |120|C1|0|A|000345
The TOTAL activity concentration of analyzed elute must be within what % of the normally eluted activity for that day of the week?

a. + or - 5
b. + or - 10
c. + or - 15
d. + or - 20

*|IL017T|IL|0688|MC|C |120|C1|0|C|000346
The MAXIMUM permissible dose in a single year to the hands of a radiation worker is:

a. 75 mrem.
b. 7.5 rem.
c. 75 rem.
d. 750 rem.

*|IL017T|IL|0688|MC|C |120|C1|0|C|000347
A radionuclide sample vial should be handled with:

a. bare hands.
b. gloved hands.
c. long forceps.
d. shielded forceps.

*|IL017T|IL|0688|MC|C |121|C1|0|D|000348
According to the MIRD formula, the factor in determining the absorbed dose from an administered radionuclide is the:

a. physiologic parameters.
b. energy maintained.
c. effective half-life per hour.
d. fraction of the emitted energy.

*|IL017T|IL|0688|MC|C |121|C1|0|D|000349
The radionuclide which can be used to image BOTH the thyroid and the stomach of an adult is:

a. iodine-131.
b. iodine-123.
c. iron 52.
d. indium-111.

*|IL017T|IL|0688|MC|C |122|C1|0|B|000350
Total radioactivity reading for a vial of radiopharmaceutical is taken using a:

a. cutie pie.
b. calibrator well.
c. G-M detector.
d. Victoreen condenser R-Meter.

*|IL017T|IL|0688|MC|C |122|C1|0|B|000351
The COMMON administered activity for Xenon is:

a. 5 mCi.
b. 10 mCi.
c. 15 mCi.
d. 20 mCi.

*|IL017T|IL|0688|MC|C |123|C1|0|C|000352
Reagents and standards in RIA kits are generally shipped in:

a. liquid form.
b. solid form.
c. syophilized form.
d. reconstituted form.

*|IL017T|IL|0688|MC|C |123|C1|0|D|000353
The aliquot of a radiopharmaceutical is withdrawn by a:

a. precision pipette.
b. shielded vials.
c. collecting vials.
d. shielded syringe.

*|IL017T|IL|0688|MC|C |124|C1|0|D|000354
The MAXIMUM amount of radioactive material that can be dumped into the sewage system is:

a. 1 millicurie per day.
b. 1 millicurie per month.
c. 1 curie per month.
d. 1 curie per year.

*|IL017T|IL|0688|MC|C |125|C1|0|A|000355
The MOST COMMON head position for adults in routine cerebral radionuclide angiography is the:

a. anterior.
b. posterior.
c. vertex.
d. Towne's.

*|IL017T|IL|0688|MC|C |125|C1|0|B|000356
The usual route of administration of radioiodine for a thyroid uptake test is:

a. intravenous.
b. oral.
c. intramuscular.
d. intrathyroidal.

*|IL017T|IL|0688|MC|C |125|C1|0|B|000357
Hospitalization is required when the radionuclide being used is:

a. phosphorus 32.
b. gold 198.
c. strontium 90.
d. cobalt 60.

*|IL017T|IL|0688|MC|C |126|C1|0|A|000358
A device used to count emission of radiation of a specific energy or range of energies to the exclusion of ALL other energies is called:

a. spectrometer.
b. isotope.
c. Geiger-muller counter.
d. accumulator.

*|IL017T|IL|0688|MC|C |126|C1|0|B|000359
The relationship between exposure and density is plotted as a curve called:

a. hyperbalic curve.
b. characteristic curve.
c. circular curve.
d. intercepting curve.

*|IL017T|IL|0688|MC|C |126|C1|0|C|000360
Imaging collimators are designed for low-energy nuclides up to a level of:

a. 150 keV.
b. 250 keV.
c. 350 keV.
d. 450 keV.

*|IL017T|IL|0688|MC|C |127|C1|0|C|000361
To obtain multi-images, the images must be:

a. lightened.
b. enlarged.
c. reduced.
d. collimated.

*|IL017T|IL|0688|MC|C |127|C1|0|A|000362
Photorecording systems have several controls that allow the operator to produce a film with the desired:

a. density.
b. contrast.
c. planimetry.
d. dosimetry.

*|IL017T|IL|0688|MC|C |128|C1|0|C|000363
In computer enhancement, spatial and temporal filters are used for:

a. interpolation.
b. smoothing.
c. background correction.
d. magnification mode.

*|IL017T|IL|0688|MC|C |128|C1|0|C|000364
All of the following are computer enhancement techniques EXCEPT:

a. scaling.
b. smoothing.
c. shadowing.
d. contrast enhancement.

*|IL017T|IL|0688|MC|C |129|C1|0|B|000365
The site chosen for injection should be cleansed with gauze or cotton moistened with a solution of:

a. 60 percent alcohol.
b. 70 percent alcohol.
c. 80 percent alcohol.
d. 90 percent alcohol.

*|IL017T|IL|0688|MC|C |129|C1|0|C|000366
The "gauge" of a needle describes the size of its bore. The size most frequently used for drawing blood specimens on adults is:

a. 18 gauge.
b. 19 gauge.
c. 20 gauge.
d. 21 gauge.

*|IL017T|IL|0688|MC|C |129|C1|0|A|000367
Blood is routinely obtained from the capillary:

a. venous system.
b. gastric system.
c. lymphatic system.
d. metastatic system.

*|IL017T|IL|0688|MC|C |130|C1|0|D|000368
There are two ways of mixing RIA reagents, swirling and:

a. shaking.
b. blending.
c. autoclaving.
d. inversion.

*|IL017T|IL|0688|MC|C |131|C1|0|B|000369
Prior to radioassay, lyophilized quality control materials must be:

a. heated.
b. dehydrated.
c. cooled.
d. dryed.

*|IL017T|IL|0688|MC|C |131|C1|0|C|000370
Radioassay quality control materials are stored in a shielded:

a. storage cabinet.
b. security safe.
c. refrigerator/freezer.
d. glass case.

*|IL017T|IL|0688|MC|C |132|C1|0|D|000371
Assay kits are evaluated for precision and:

a. absorption.
b. effectiveness.
c. potential.
d. accuracy.

*|IL017T|IL|0688|MC|C |132|C1|0|A|000372
Serum is separated from blood cells by using a:

a. centrifuge.
b. vortex mixer.
c. well counter.
d. scintillation detector.

*|IL017T|IL|0688|MC|C |133|C1|0|D|000373
A count from a radioassay sample could be obtained by using:

a. a collimator.
b. a dosimeter.
c. an electroscope counter.
d. a scintillation counter.

*|IL017T|IL|0688|MC|C |133|C1|0|C|000374
The r2 value of each radioassay sample tube must be greater than or equal to:

a. .025.
b. .046.
c. .098.
d. 1.04.

*|IL017T|IL|0688|MC|C |134|C1|0|C|000375
The eluate of 99Mo--99mTc generators should be checked for the presence of 99Mo each:

a. day.
b. time a new generator is used.
c. time the generator is eluted.
d. time a patient dose is prepared.

*|IL017T|IL|0688|MC|C |134|C1|0|D|000376
The first International Reference Preparation (IRP) and the second International Standard (IS) was established by the:

a. Nuclear Regulatory Commission (NRC).
b. Food and Drug Administration (FDA).
c. Health and Human Services (HHS).
d. World Health Organization (WHO).

*|IL017T|IL|0688|MC|C |134|C1|0|A|000377
To remove any loose standard from the inner wall and stopper, the vial or container should be:

a. inverted.
b. vortexed.
c. shook.
d. centrifuged.

*|IL017T|IL|0688|MC|C |135|C1|0|B|000378
All of the following are methods of collecting a urine sample EXCEPT:

a. urinal.
b. commode.
c. graduated cup.
d. bedpan.

*|IL017T|IL|0688|MC|C |135|C1|0|C|000379
The patient collecting his own urine sample is the:

a. pediatric.
b. female.
c. ambulatory.
d. immobile.

*|IL017T|IL|0688|MC|C |136|C1|0|C|000380
The type of filter used to remove statistical fluctuations in the image is a:

a. compensating filter.
b. wedge filter.
c. spatial filter.
d. temporal filter.

*|IL017T|IL|0688|MC|C |137|C1|0|A|000381
Recalling all frames of data sequentially at a rate of speed that's variable is termed:

a. cinematic.
b. photomultiplier display.
c. multiplane scanning.
d. intrinsic resolution.

*|IL017T|IL|0688|MC|C |137|C1|0|D|000382
When performing region of interest studies, all of the following are used EXCEPT the:

a. joy stick.
b. cursor lines.
c. light pen.
d. plotter.

*|IL017T|IL|0688|MC|C |138|C1|0|A|000383
If a physician wanted to view the computer images in cinematic sequential form, the technologist would use the:

a. multigated mode.
b. list mode.
c. dynamic mode.
d. static mode.

*|IL017T|IL|0688|MC|C |138|C1|0|C|000384
If a physician wanted to see a certain area of the computer results while in the static acquisition mode, the technologist would use the:

a. interpolation feature.
b. smoothing feature.
c. magnification feature.
d. slice profiles feature.

*|IL017T|IL|0688|MC|C |139|C1|0|B|000385
The amount of energy imparted to matter by ionizing radiation is measured in units of:

a. roentgens.
b. rads.
c. RBE.
d. curies.

*|IL017T|IL|0688|MC|C |139|C1|0|C|000386
Regarding acute exposure to ionizing radiation, LD 50/30 refers to:

a. low dose of 50 kVp-30 inches.
b. lone detection of 50 degrees at 30 inches.
c. lethal dose to 50% of exposed persons with death resulting in 30 days.
d. linear deviation of 30 chromosomes out of each group of 50.

*|IL017T|IL|0688|MC|C |140|C1|0|C|000387
The total distance an electron will travel in a material before losing all of its energy is referred to as its:

a. linear attenuation.
b. velocity.
c. range.
d. intensity.

*|IL017T|IL|0688|MC|C |140|C1|0|C|000388
To produce radiation with a wavelength of 1 Angstrom, the energy must be:

a. 124 ev.
b. 1240 ev.
c. 12,400 ev.
d. 124,000 ev.

*|IL017T|IL|0688|MC|C |140|C1|0|A|000389
In cases of overexposure in EXCESS of 25 rems to the whole body, the time period for notification of the appropriate NRC regional office is:

a. immediately.
b. within 24 hours.
c. within 7 days.
d. within 30 days.

*|IL017T|IL|0688|MC|C |140|C1|0|D|000390
The MAXIMUM exposure rate from a Cobalt 60 source at a distance of 1 meter in any direction must not exceed:

a. 4 MR/hr.
b. 6 MR/hr.
c. 8 MR/hr.
d. 10 MR/hr.

*|IL017T|IL|0688|MC|C |140|C1|0|D|000391
The MOST radioresistant organ system is the:

a. hematopoietic system.
b. reproductive system.
c. lymphatic system.
d. central nervous system.

*|IL017T|IL|0688|MC|C |140|C2|0|A|000392
An x-ray tube operates at 200 kV and 10 mA gives an exposure rate of 30 R/minute at 50 cm. If the mA is increased to 12.5, the new exposure rate would be:

a. 36.0.
b. 37.5.
c. 38.5.
d. 39.0.

*|IL017T|IL|0688|MC|C |140|C1|0|C|000393
The degree of penetration by gamma rays is:

a. less than the penetration by alpha particles.
b. less than the penetration by alpha particles, but greater than the penetration by beta particles.
c. greater than the penetration by beta particles.
d. greater than the penetration by alpha particles, but less than the penetration by beta particles.

*|IL017T|IL|0688|MC|C |140|C1|0|B|000394
Radiosensitivity of a cell is directly proportional to the:

a. cell size.
b. temperature.
c. amount of the particular type of cell.
d. number of chromosomes.

*|IL017T|IL|0688|MC|C |140|C1|0|D|000395
The MAXIMUM permissible dose (MPD) concept was established by the:

a. Nuclear Regulatory Commission.
b. Atomic Energy Commission.
c. Food and Drug Administration.
d. National Council on Radiation Protection and Measurements.

*|IL017T|IL|0688|MC|C |140|C1|0|C|000396
The total energy absorbed from a beam of radiation by a patient is called:

a. dose.
b. exposure.
c. integral dose.
d. linear energy transfer.

*|IL017T|IL|0688|MC|C |140|C1|0|A|000397
The term "roentgen" means:

a. a unit of radiologic exposure.
b. device having resistance.
c. act of repelling.
d. resistance to the flow of magnetism.

*|IL017T|IL|0688|MC|C |140|C1|0|D|000398
Integral dose is measured in units of:

a. rads.
b. rems.
c. roentgens.
d. megagram-rads.

*|IL017T|IL|0688|MC|C |141|C1|0|D|000399
The MOST common block-cutting material is:

a. wood.
b. plaster.
c. plastic.
d. styrofoam.

*|IL017T|IL|0688|MC|C |141|C1|0|B|000400
The main reason for scheduling block-cutting procedures is to:

a. keep patient from waiting during treatment.
b. insure all materials are available for fabrication.
c. determine proper radiation dosage.
d. plan radiation treatment plan.

*|IL017T|IL|0688|MC|C |142|C1|0|B|000401
The term "lateral" means:

a. toward the midline away from the side.
b. away from the midline toward the side.
c. below midline toward bottom.
d. right of midline toward top.

*|IL017T||0688|MC|C |142|C1|0|B|000402
An imaginary line drawn between the pupils of the eye is called:

a. Reid's base line.
b. interpupillary line.
c. canthomeatal line.
d. orbitomeatal line.

*|IL017T|IL|0688|MC|C |142|C1|0|C|000403
What tool is used for laying out a radiation treatment plan on a patient's body?

a. protractor
b. template
c. french curve
d. shadow block

*|IL017T|IL|0688|MC|C |142|C1|0|A|000404
The term "apex" means:

a. top.
b. bottom.
c. left.
d. right.

*|IL017T|IL|0688|MC|C |142|C1|0|A|000405
Which of the following is NOT depicted on the contour drawing of the radiation treatment area?

a. dosage of treatment area
b. diameter of treatment area
c. shape of treatment area
d. borders of treatment area

*|IL017T|IL|0688|MC|C |143|C1|0|D|000406
When using the direct method for treatment shell fabrication, the materials used for the separation line is:

a. paraffin strips.
b. rubber strips.
c. glass strips.
d. lead strips.

*|IL017T|IL|0688|MC|C |143|C1|0|B|000407
The fabrication process which utilizes the patient as a model is known as the:

a. molding technique.
b. direct technique.
c. vacuum technique.
d. indirect technique.

*|IL017T|IL|0688|MC|C |143|C1|0|B|000408
What is not a method for protecting hairy surfaces when using the direct method of treatment shell fabrication?

a. vaseline
b. coat of oil
c. rubber strips
d. plastic wrap

*|IL017T|IL|0688|MC|C |144|C1|0|A|000409
The separation media when aplying alginate to a patient's skin is:

a. nothing.
b. vaseline.
c. body oil.
d. paraffin.

*|IL017T|IL|0688|MC|C |144|C1|0|B|000410
When using the indirect method, a negative impression of the patient's treatment area can be obtained by:

a. plaster of paris.
b. alginate mask.
c. plaster strips.
d. wax impression.

*|IL017T|IL|0688|MC|C |144|C1|0|B|000411
The treatment shell fabrication process which utilizes a radiotherapy mold or solid cast is known as the:

a. direct method.
b. indirect method.
c. vacuum method.
d. wax impression.

*|IL017T|IL|0688|MC|C |145|C1|0|D|000412
The purpose of an intracavitary mold is to provide a:

a. positive mold of treatment area.
b. negative mold of treatment area.
c. holder for treatment area.
d. holder for radioactive source.

*|IL017T|IL|0688|MC|C |145|C1|0|C|000413
All of the following are included on the fabrication tag except:

a. patient's name.
b. fabricator name.
c. treatment dosage.
d. date of fabrication.

*|IL017T|IL|0688|MC|C |146|C1|0|B|000414
To smooth a solid cast surface, an abrasive tool which can be used is a:

a. file.
b. steel wool.
c. wet rag.
d. coarse sandpaper.

*|IL017T|IL|0688|MC|C |146|C1|0|C|000415
The material used to make a solid cast from an alginate mask is:

a. wax.
b. liquid rosin.
c. plaster of paris.
d. melted lead.

*|IL017T|IL|0688|MC|C |147|C1|0|A|000416
When fabricating a plastic treatment shell using a vacuum forming machine, compressed air, and a vacuum, you must use:

a. a heated plastic sheet.
b. a cold plastic sheet.
c. liquid plastic.
d. heated bee's wax.

*|IL017T|IL|0688|MC|C |147|C1|0|D|000417
A plastic treatment shell is formed by:

a. applying liquid alginate to solid cast.
b. applying liquid plastic to solid cast.
c. applying a fiberglass sheet to solid cast.
d. applying a transparent plastic sheet.

*|IL017T|IL|0688|MC|C |148|C1|0|C|000418
The purpose of a dental support tray is to:

a. hold patient's mouth open.
b. support patient's teeth.
c. hold impression wax.
d. support treatment.

*|IL017T|IL|0688|MC|C |148|C1|0|C|000419
When forming an intraoral, surface stent, or wax impression, the wax is heated by:

a. flame.
b. hot plate.
c. water bath.
d. electric melting pot.

*|IL017T|IL|0688|MC|C |149|C1|0|D|000420
All of the following are functions of a bite-block except:

a. localize the treatment area.
b. direct treatment beam.
c. protect area surrounding treatment area.
d. measure treatment area.

*|IL017T|IL|0688|MC|C |149|C1|0|C|000421
A bite-block mold is formed from a wax cast by:

a. pouring plaster over the cast.
b. pouring alginate over the cast.
c. immersing cast in plaster.
d. immersing cast in melted lead.

*|IL017T|IL|0688|MC|C |150|C1|0|D|000422
A lead bite-block is formed by:

a. forming lead strips of plaster mold.
b. immersing plaster mold in melted lead.
c. wrapping plaster mold with lead foil.
d. pouring melted lead inside plaster mold.

*|IL017T|IL|0688|MC|C |150|C1|0|A|000423
When a lead bite-block forms, the wax cast set in the plaster mold is:

a. melted.
b. removed.
c. covered by lead strips.
d. covered by alginate.

*|IL017T|IL|0688|MC|C |151|C1|0|D|000424
The material used as a bolus for treatment shell is:

a. oil.
b. vaseline.
c. alginate.
d. bee's wax.

*|IL017T|IL|0688|MC|C |151|C1|0|A|000425
The purpose of applying bolus to a treatment shell is to:

a. prevent contact of skin and treatment area.
b. block scatter radiation from patient's skin.
c. make it easier to put on treatment shell.
d. direct treatment beam to treatment area.

*|IL017T|IL|0688|MC|C |152|C1|0|B|000426
Shadow shields and contact shields are used to protect the:

a. thyroid.
b. gonads.
c. eyes.
d. bone marrow.

*|IL017T|IL|0688|MC|C |152|C1|0|A|000427
Cutting of lead sheets for treatment shielding is done using:

a. shears.
b. scissors.
c. jigsaw.
d. hot wire cutter.

*|IL017T|IL|0688|MC|C |152|C1|0|B|000428
The maximum permissible prospective dose to the gonads for any one year is:

a. 1 rem.
b. 5 rem.
c. 15 rem.
d. 25 rem.

*|IL017T|IL|0688|MC|C |152|C1|0|B|000429
The MOST common method for binding lead layers is:

a. glue.
b. solder.
c. metalic tape.
d. rivets.

*|IL017T|IL|0688|MC|C |153|C1|0|B|000430
When fabricating lead shielding on a plaster cast, portal and shielding outline marks are placed on the:

a. patient.
b. plaster cast.
c. contour drawing.
d. lead sheets.

*|IL017T|IL|0688|MC|C |153|C1|0|C|000431
The tool used to conform lead shielding to a plaster cast is a:

a. heating device.
b. vacuum device.
c. ballpeen hammer.
d. rubber mallet.

*|IL017T|IL|0688|MC|C |154|C1|0|A|000432
The MOST common material used for radiation treatment shells is:

a. lead.
b. wood.
c. plaster.
d. cardboard.

*|IL017T|IL|0688|MC|C |154|C1|0|B|000433
The function of a treatment portal is to:

a. allow treatment area to be viewed.
b. allow radiation dosage to reach treatment area.
c. prevent radiation dosage from reaching patient.
d. secure shielding to treatment area.

*|IL017T|IL|0688|MC|C |155|C1|0|B|000434
The BEST view for orbits is the:

a. pA position.
b. Caldwell position.
c. lateral position.
d. Towne position.

*|IL017T|IL|0688|MC|C |155|C1|0|C|000435
The MOST radiosensitive area of the eye is the:

a. pupil.
b. iris.
c. lens.
d. retina.

*|IL017T|IL|0688|MC|C |155|C1|0|C|000436
Contact (spatula-type) internal eye shields are usually made out of:

a. plastic.
b. glass.
c. lead.
d. alginate.

*|IL017T|IL|0688|MC|C |155|C1|0|D|000437
The MAJOR concern when handling a fabricated contact internal eye shield is:

a. breaking the contact.
b. putting contact in the wrong eye.
c. using contact lubrication solution.
d. scratching the soft lead of contact.

*|IL017T|IL|0688|MC|C |156|C1|0|C|000438
The MAIN purpose of prefitting a treatment shell is to:

a. apply bolus materials.
b. insure comfortable fit of treatment shell.
c. check the type of fabrication materials.
d. verify position of shell attachments.

*|IL017T|IL|0688|MC|C |156|C1|0|B|000439
The purpose of a wedge is to obtain:

a. tighter fit of shell.
b. designated angulation of shell.
c. identification of shell.
d. block positioning on shell.

*|IL017T|IL|0688|MC|C |157|C1|0|D|000440
Beam blocks are:

a. various sizes and uniform shapes.
b. same size and various shapes.
c. same size and shape, various thicknesses.
d. various sizes, shapes and thicknesses.

*|IL017T|IL|0688|MC|C |157|C1|0|D|000441
The MAIN purpose of the external beam block is to:

a. protect the technologist from radiation.
b. protect the patient from radiation.
c. increase the beam dosage at treatment area.
d. direct the beam to the treatment area.

*|IL017T|IL|0688|MC|C |158|C1|0|D|000442
The type of tool used to cut styrofoam molds for beam blocking is a:

a. knife.
b. coping saw.
c. jigsaw.
d. hot wire cutting device.

*|IL017T|IL|0688|MC|C |158|C1|0|A|000443
The shape of a styrofoam mold can be checked with:

a. a light system.
b. a template.
c. the patient's body.
d. contour drawing.

*|IL017T|IL|0688|MC|C |159|C1|0|C|000444
The MOST common method of melting lead for block fabrication is a:

a. steel pot.
b. cast iron kettle.
c. melting ladle.
d. aluminum pan.

*|IL017T|IL|0688|MC|C |159|C1|0|B|000445
The type of blocking material used to fabricate lead shielding beam block is:

a. liquid.
b. low-melting.
c. medium-melting.
d. high-melting.

*|IL017T|IL|0688|MC|C |160|C1|0|B|000446
The MAXIMUM accumulated MPD for a 42-year-old radiographer is:

a. 1000 rem.
b. 120 rem.
c. 10 rem.
d. 5 rem.

*|IL017T|IL|0688|MC|C |161|C1|0|B|000447
The person LEAST likely to be involved in the development of the radiation therapy treatment plan is the:

a. physicist.
b. referring physician.
c. radiation oncologist.
d. radiation therapy technologist.

*|IL017T|IL|0688|MC|C |161|C1|0|B|000448
A filter designed to modify radiation dose distribution within the patient is called a:

a. collimator.
b. comp-filter.
c. cone filter.
d. dosimeter.

*|IL017T|IL|0688|MC|C |162|C1|0|A|000449
Tissue-equivalent material used to obtain a more uniform dosage distribution is called:

a. bolus.
b. wedge.
c. comp-filter.
d. beam block.

*|IL017T|IL|0688|MC|C |162|C1|0|B|000450
The material considered a bolus in radiation therapy is:

a. baby oil.
b. rice bag.
c. aqueous gel.
d. body lotion.

*|IL017T|IL|0688|MC|C |163|C1|0|D|000451
In positioning for a true lateral projection of the skull with the central ray perpendicular to the film, the median plane should be:

a. at an angle of 15 degrees with the film.
b. at an angle of 15 degrees with the central ray.
c. perpendicular to the film.
d. parallel with the film.

*|IL017T|IL|0688|MC|C |163|C1|0|D|000452
The function LEAST likely to be done with computerized treatment planning is:

a. required shielding.
b. beam portal and angles.
c. treatment geometry.
d. treatment simulation.

*|IL017T|IL|0688|MC|C |163|C1|0|A|000453
The program that enables computerized treatment planning is:

a. CAD.
b. CAM.
c. CADD.
d. CAAA.

*|IL017T|IL|0688|MC|D |164|C1|0|D|000454
When performing retrograde urography, the head of the urologic table should be elevated to:

a. 5-10 degrees.
b. 15-20 degrees.
c. 25-30 degrees.
d. 35-40 degrees.

*|IL017T|IL|0688|MC|D |164|C1|0|D|000455
The axillary portion of the ribs are best shown in the:

a. anterior-posterior position.
b. lateral position.
c. posterior-anterior position.
d. oblique position.

*|IL017T|IL|0688|MC|D |164|C1|0|B|000456
The axial projection of the patella is taken primarily to demonstrate a:

a. foriegn body.
b. vertical fracture.
c. horizontal fracture.
d. dislocation.

*|IL017T|IL|0688|MC|D |164|C1|0|A|000457
Routinely a radiograph of forearm is taken:

a. in supination.
b. in pronation.
c. with the use of the bucky.
d. with the beam perpendicular to the film.

*|IL017T|IL|0688|MC|D |164|C1|0|C|000458
When examining the lateral cervical spine, the technologist can center the central ray at the level of the external auditory meatus. The purpose of this technique is to:

a. magnify the cervical vertebrae.
b. make centering easier.
c. project the magnified shadow of the shoulder remote from the film below those of the lower cervical vertebrae.
d. project the non-magnified shadow of the shoulder remote from the film below those of the lower cervical vertebrae.

*|IL017T|IL|0688|MC|D |164|C1|0|C|000459
Milliamperage adjustment controls the:

a. wavelength of x-rays produced.
b. penetrating ability of the x-ray.
c. quantity of x-rays produced.
d. energy of electrons in the x-ray.

*|IL017T|IL|0688|MC|D |164|C1|0|A|000460
The set of technical factors that produce high contrast in the radiograph is:

a. 50 MA, 3/4 second, 50 KVP.
b. 100 MA, 1/4 second, 90 KVP.
c. 150 MA, 1/2 second, 100 KVP.
d. 200 MA, 3/4 second, 120 KVP.

*|IL017T|IL|0688|MC|D |164|C1|0|A|000461
The bone of the lower extremity that generally requires two films to include the entire bone is the:

a. femur.
b. patella.
c. navicular.
d. metatarsals.

*|IL017T|IL|0688|MC|D |164|C1|0|C|000462
The positions used to demonstrate a fluid level in the chest or abdomen of a patient who is unable to be placed in the erect position is the:

a. supine position.
b. Trendelenburg's position.
c. lateral decubitus position.
d. transthoracic position.

*|IL017T|IL|0688|MC|D |164|C1|0|C|000463
In the case of a suspected bowel obstruction, a lateral decubitus film would most likely be used to demonstrate the:

a. location of the obstructing material.
b. motility of the colon.
c. presence of gas or fluid levels.
d. inflamed appendix.

*|IL017T|IL|0688|MC|D |165|C1|0|C|000464
When using mobile radiographic equipment, the length of the exposure switch cord should be at LEAST:

a. 2 feet.
b. 5 feet.
c. 6 feet.
d. 8 feet.

*|IL017T|IL|0688|MC|D |165|C1|0|D|000465
A sialogram is an examination of the:

a. ear.
b. eye.
c. mouth.
d. salivary gland.

*|IL017T|IL|0688|MC|D |165|C1|0|D|000466
A routine PA chest radiograph is taken at a six foot target-film distance to:

a. increase contrast.
b. increase magnification.
c. decrease detail.
d. decrease magnification.

*|IL017T|IL|0688|MC|D |165|C1|0|B|000467
When examining the salivary glands with or without opaque medium:

a. a large focal spot is used.
b. soft tissue technique is used.
c. industrial films are indicated.
d. fluoroscopy should be performed.

*|IL017T|IL|0688|MC|D |165|C1|0|D|000468
Anterior clinoids are BEST demonstrated in the:

a. PA position.
b. Caldwell position.
c. Towne's position.
d. lateral skull position.

*|IL017T|IL|0688|MC|D |165|C1|0|C|000469
When using the Oltanello method of demonstrating the entire cervical spine in the anteroposterior projection, the exposure time used to blur out the mandible is:

a. one second.
b. five seconds.
c. ten seconds.
d. twenty seconds.

*|IL017T|IL|0688|MC|D |165|C1|0|A|000470
The coracoid process is located on the:

a. scapula.
b. ulna.
c. pelvis.
d. sphenoid bone.

*|IL017T|IL|0688|MC|D |165|C1|0|B|000471
To obtain a radiograph of the ribs below the diaphragm, the patient would be instructed to:

a. breath normally.
b. exhale fully and hold it.
c. suspend normal respiration.
d. take a deep breath and hold it.

*|IL017T|IL|0688|MC|D |165|C1|0|D|000472
In making a radiograph of the coccyx in the anterior-posterior position, the central ray is directed:

a. perpendicular to the film.
b. laterally.
c. cephalad.
d. caudad.

*|IL017T|IL|0688|MC|D |166|C1|0|B|000473
The radiographic position or projection that BEST demonstrates the pituitary fossa is the:

a. modified Waters position for the facial bones.
b. lateral sella turcica.
c. lateral transcranial projection for the TMJ.
d. posteroanterior projection for the cerebral cranium.

*|IL017T|IL|0688|MC|D |166|C1|0|B|000474
Odontoid process is BEST demonstrated in the:

a. Towne's position.
b. Waters position.
c. Stenver's position.
d. Rhese position.

*|IL017T|IL|0688|MC|D |167|C1|0|C|000475
The term "foramen" means:

a. a benign bone tumor.
b. destruction of tissue.
c. a passageway in the bone.
d. between the ribs.

*|IL017T|IL|0688|MC|D |167|C1|0|D|000476
The name of the body plane that divides the body into equal anterior and posterior halves is the:

a. mid-abdominal.
b. mid-transverse.
c. mid-sagittal.
d. mid-coronal.

*|IL017T|IL|0688|MC|D |168|C1|0|A|000477
When a general survey examination of the liver is made, the patient should be:

a. prone.
b. supine.
c. oblique.
d. lateral.

*|IL017T|IL|0688|MC|D |168|C1|0|C|000478
At the completion of the insertion procedure for a SWAN-GANZ catheter, the catheter position is confirmed by a routine radiograph of the:

a. bladder.
b. trachea.
c. chest.
d. stomach.

*|IL017T|IL|0688|MC|D |169|C1|0|A|000479
The xeromammography dosimetry to the breast is approximately:

a. 1 rad.
b. 3 rad.
c. 5 rad.
d. 10 rad.

*|IL017T|IL|0688|MC|D |169|C1|0|D|000480
Xeroradiography films are processed using the:

a. manual technique.
b. film processor.
c. automatic processor.
d. Xerox processor.

*|IL017T|IL|0688|MC|D |169|C1|0|C|000481
A system for displaying x-ray images using a dry electrophotographic process is called:

a. venography.
b. tomography.
c. xeroradiography.
d. arteriography.

*|IL017T|IL|0688|MC|D |169|C1|0|C|000482
The ratio of the height of the lead strips to the distance between the lead strips is a definition of grid:

a. frequency.
b. bias.
c. ratio.
d. slope.

*|IL017T|IL|0688|MC|D |170|C1|0|A|000483
The Law projection is designed to show the:

a. mastoids.
b. sella turcica.
c. AP hip.
d. odontoid process.

*|IL017T|IL|0688|MC|D |170|C1|0|A|000484
The identification markers placed for craniocaudal projection go on the:

a. lateral side.
b. upper border.
c. top.
d. bottom.

*|IL017T|IL|0688|MC|D |170|C1|0|D|000485
Tiny calcifications found in the breast are called:

a. asympotmatic.
b. fatty infiltration.
c. post partum mastitis.
d. microcalcifications.

*|IL017T|IL|0688|MC|D |170|C1|0|D|000486
A considered supplemental projection in mammography is:

a. craniocaudal.
b. mediolateral.
c. recumbent.
d. axilla.

*|IL017T|IL|0688|MC|D |171|C1|0|D|000487
MA has the greatest effect on:

a. radiographic contrast.
b. subject contrast.
c. part penetration.
d. radiographic density.

*|IL017T|IL|0688|MC|D |171|C1|0|A|000488
KVP level for iodine contrast media studies should be LESS than:

a. 78.
b. 82.
c. 85.
d. 90.

*|IL017T|IL|0688|MC|D |172|C1|0|C|000489
During fluoroscopy ALL tabletops should be no less than how many inches from the tube?

a. 5 inches
b. 10 inches
c. 15 inches
d. 20 inches

*|IL017T|IL|0688|MC|D |172|C1|0|B|000490
The principle source of radiation exposure to the technologist occurs during portable radiation and:

a. mammography.
b. fluoroscopy.
c. xeroradiography.
d. myelograms.

*|IL017T|IL|0688|MC|D |172|C1|0|D|000491
A method NOT used for reducing personnel exposure during fluoroscopy is called:

a. shutters.
b. lead apron.
c. lead gloves.
d. lead wall.

*|IL017T|IL|0688|MC|D |172|C1|0|C|000492
The combinations that would give the greatest personnel protection during fluoroscopy is:

a. 5 mA, 100 kV with 9 x 9 front loading spot films.
b. 5 mA, 120 kV with 8 x 10 front loading spot films.
c. 5 mA, 120 kV remote control unit with 100 mm spots.
d. 5 mA, 120 kV with 9 x 9 back loading spot films.

*|IL017T|IL|0688|MC|D |172|C1|0|A|000493
A piece of x-ray apparatus consisting of an x-ray tube properly housed and mounted so that x-rays emanating from the tube strikes on a flourescent screen is called a:

a. fluoroscope.
b. generator.
c. electroscope.
d. compensator.

*|IL017T|IL|0688|MC|D |173|C1|0|C|000494
The one view that shows ALL the paranasal sinuses is:

a. PA skull.
b. Caldwell position.
c. Waters position.
d. Rhese position.

*|IL017T|IL|0688|MC|D |174|C1|0|B|000495
After the peripheral intravenous radiopharmaceutical administration in cerebral radionuclide angiography, the gamma camera should be started:

a. 1-2 seconds.
b. 6-8 seconds.
c. 12-14 seconds.
d. 20-24 seconds.

*|IL017T|IL|0688|MC|D |174|C1|0|D|000496
The "swinging heart" is characteristic of:

a. tetralogy of Fallot.
b. mitral valve prolapse.
c. left ventricular outflow tract obstruction.
d. pericardial effusion.

*|IL017T|IL|0688|MC|D |174|C1|0|C|000497
The structure demonstrated when a radiograph is taken immediately on injection during a carotid angiogram is:

a. capillaries.
b. venous structures.
c. arterial structures.
d. lymph structures.

*|IL017T|IL|0688|MC|D |175|C1|0|B|000498
The technique which is used principally for arteriography is the:

a. Synder.
b. Seldinger.
c. Waters.
d. Bucky.

*|IL017T|IL|0688|MC|D |175|C1|0|A|000499
The two methods used in renal arteriography are selective and:

a. nonselective.
b. diagnostic.
c. translumbar.
d. negative.

*|IL017T|IL|0688|MC|D |175|C1|0|D|000500
All of the following would be a type of arteriography EXCEPT:

a. renal.
b. femoral.
c. coronary.
d. cerebral.

*|IL017T|IL|0688|MC|D |175|C1|0|B|000501
Radiographic examination of the arteries is called:

a. articular radiography.
b. arteriography.
c. arteriosclerosis.
d. auricular x-ray.

*|IL017T|IL|0688|MC|D |176|C1|0|C|000502
In venography, the contrast media that would be used is:

a. air.
b. oxygen.
c. iodine.
d. pantopaque.

*|IL017T|IL|0688|MC|D |177|C1|0|D|000503
The type of test performed to demonstrate the lymph nodes and patency of the vessels to determine the involvement of pathology is:

a. lymphography.
b. cystography.
c. sialography.
d. lymphangiography.

*|IL017T|IL|0688|MC|D |177|C1|0|A|000504
The types of iodine compounds used in lymphangiography are:

a. oil-based.
b. water-based.
c. water-soluble.
d. alcohol-soluble.

*|IL017T|IL|0688|MC|D |177|C1|0|B|000505
The two types of blue dye used in lymphangiography are sky blue 4 percent or:

a. midnight blue 10 percent
b. blue violet 11 percent
c. dark blue 20 percent
d. light blue 2 percent

*|IL017T|IL|0688|MC|D |178|C1|0|C|000506
When myelography is performed using air as the contrast media, the examination is referred to as:

a. angiography.
b. arteriography.
c. pneumomyelogram.
d. ventriculography.

*|IL017T|IL|0688|MC|D |179|C1|0|B|000507
The group of joints that arthrography is specifically concerned with is:

a. bicipital.
b. synovial.
c. auricular.
d. hydronephrosis.

*|IL017T|IL|0688|MC|D |179|C1|0|C|000508
The ONLY special radiographic equipment needed during an arthrogram is an examination table that tilts to an angle at least:

a. 70 degrees.
b. 80 degrees.
c. 90 degrees.
d. 100 degrees.

*|IL017T|IL|0688|MC|D |179|C1|0|A|000509
An example of a positive agent (iodized oil bank) is called:

a. pantopaque.
b. opaque.
c. transparent.
d. translumbar.

*|IL017T|IL|0688|MC|D |179|C1|0|B|000510
The use of air or other gas in an arthrogram study is called a:

a. scan.
b. pneumoarthrography.
c. radiography.
d. radioassay.

*|IL017T|IL|0688|MC|D |180|C1|0|A|000511
For visualization of the bile duct system on a patient with chronic liver disease, the examination is:

a. transhepatic cholangiogram.
b. lymphangiography.
c. encephalography.
d. pneumoencephalography.

*|IL017T|IL|0688|MC|D |180|C1|0|C|000512
The exam usually made to discern whether the major biliary ducts are free from obstruction is:

a. arteriography.
b. pelvimetry.
c. cholangiogram.
d. angiocardiography.

*|IL017T|IL|0688|MC|D |180|C1|0|C|000513
The TWO major types of cholangiograms are intravenous and:

a. water soluble.
b. metrizamide.
c. operative.
d. gastric.

*|IL017T|IL|0688|MC|D |181|C1|0|C|000514
The gamma camera collimator which will have the lower MTF is:

a. high sensitivity.
b. high resolution.
c. low sensitivity.
d. low resolution.

*|IL017T|IL|0688|MC|D |181|C1|0|B|000515
A way to improve scatter rejection on a gamma camera is to use:

a. a wider window.
b. two windows on the same peak.
c. a window offset to the high side.
d. a window offset to the low side.

*|IL017T|IL|0688|MC|D |181|C2|0|B|000516
An image of the thyroid is being done on a gamma camera equipped with a pinhole collimator. The pinhole has an aperture of 1.5 mm. The thyroid to pinhole distance is 8 cm. and the pinhole to crystal distance is 16 cm. on the crystal. The thyroid is:

a. reduced by a factor of two.
b. magnified by a factor of two.
c. magnified by a factor of three.
d. not enough data is given to answer the question.

*|IL017T|IL|0688|MC|D |182|C1|0|A|000517
Visualization of the lumen in the uterus and fallopian tubes after opacification by injection of an oily contrast material is called:

a. hysterosalpingography.
b. cystourethrography.
c. pneumoencephalography.
d. angiocardiography.

*|IL017T|IL|0688|MC|D |182|C1|0|B|000518
The base contrast media used in hysterosalpingography is:

a. air.
b. oil.
c. water.
d. iodine.

*|IL017T|IL|0688|MC|D |183|C1|0|B|000519
The gauge in the Frank biopsy needle is:

a. 16 gauge.
b. 18 gauge.
c. 22 gauge.
d. 24 gauge.

*|IL017T|IL|0688|MC|D |183|C1|0|B|000520
The sweet localizer is likely to be used in the examination of the:

a. sinuses.
b. eye.
c. GI tract.
d. bladder.

*|IL017T|IL|0688|MC|D |183|C1|0|D|000521
The MAIN purpose of localization radiographs is to guide the path of a:

a. contrast media.
b. radionuclide.
c. radiation beam.
d. biopsy needle.

*|IL017T|IL|0688|MC|D |183|C1|0|A|000522
Another name for a localization radiograph is a:

a. scout film.
b. subtraction film.
c. duplication film.
d. negative film.

*|IL017T|IL|0688|MC|D |184|C1|0|D|000523
During a bronchogram, the patient would be encouraged to:

a. talk.
b. cough.
c. breath deeply.
d. breath rapidly.

*|IL017T|IL|0688|MC|D |184|C1|0|C|000524
The examination of the bronchi and bronchioles by injection of contrast media is called:

a. diskogram.
b. azygography.
c. bronchography.
d. lymphangiography.

*|IL017T|IL|0688|MC|D |185|C1|0|B|000525
The examination to be performed if kidney stones are suspected is:

a. hyperthyroidism.
b. intravenous pyelogram.
c. pneumoencephalography.
d. transhepatic cholangiogram.

*|IL017T|IL|0688|MC|D |185|C1|0|D|000526
The examination that utilizes an IV for administering contrast media is:

a. pneumoencephalography.
b. encephalography.
c. sialography.
d. pyelogram.

*|IL017T|IL|0688|MC|D |186|C1|0|A|000527
The radiographic study of the bladder after injection of a contrast media through a catheter is known as:

a. cystography.
b. kymography.
c. sialography.
d. bronchography.

*|IL017T|IL|0688|MC|D |186|C1|0|D|000528
A foley catheter is secured in position by:

a. tape.
b. straps.
c. groves.
d. a balloon.

*|IL017T|IL|0688|MC|D |186|C1|0|C|000529
In a cystogram, what is filled with contrast media?

a. renal pelvis
b. upper urinary tract
c. patient's bladder
d. lower urinary tract

*|IL017T|IL|0688|MC|D |187|C1|0|B|000530
The main threat to the patient during an intravenous cholangiogram is:

a. AIDS.
b. reaction to contrast.
c. radiation poisoning.
d. drug overdose.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000531
The most common echocardiographic technique for evaluating the left ventricle utilizes:

a. m-mode dimensions between the IVS and the mitral valve.
b. m-mode dimensions between the IVS and the posterior left ventricular wall.
c. the apical four-chamber view.
d. short axis two-dimensional echocardiography of the left ventricle.

*|IL017T|IL|0688|MC|D |188|C1|0|A|000532
Transducer positions for the usual echocardiographic examination include:

a. left and right parasternal borders.
b. top and bottom parasternal borders.
c. left and right sternal angle.
d. top and bottom xiphisternal junction.

*|IL017T|IL|0688|MC|D |188|C1|0|C|000533
The shape of the mitral valve on a echocardiogram is a:

a. box pattern.
b. circular pattern.
c. M pattern.
d. diamond pattern.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000534
In two-dimensional echocardiography, the anterior leaflet of the tricuspid valve resembles a:

a. fishmouth.
b. comma or eyebrow.
c. box.
d. diamond.

*|IL017T|IL|0688|MC|D |188|C1|0|A|000535
The structure that lies posterior to the aorta on the M-mode echocardiogram is the:

a. left atrium.
b. coronary sinus.
c. left ventricular outflow tract.
d. papillary muscle.

*|IL017T|IL|0688|MC|D |188|C1|0|A|000536
Primary echocardiographic findings in mitral stenosis include:

a. increased echoes from mitral leaflets.
b. increased mitral leaflet excursion.
c. decreased echoes from mitral leaflets.
d. decreased mitral leaflet excursion.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000537
The echocardiographic technique for examining the coronary arteries is the:

a. sinus technique.
b. Strobe freeze-frame technique.
c. Stankowitz technique.
d. "Ice pick" technique.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000538
Systolic anterior motion of the mitral leaflet echo may be enhanced during echocardiography with the use of:

a. pro-banthine.
b. amyl nitrate.
c. nitroglycerin.
d. benzedrine.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000539
With two-dimensional echocardiography, the flail portion of the mitral valve can be seen extending into the:

a. left ventricle.
b. left atrium
c. aorta.
d. left ventricular outflow tract.

*|IL017T|IL|0688|MC|D |188|C1|0|C|000540
In order to study the anterior mitral valve leaflet with echocardiography, it is necessary to use a:

a. right ventricle to left atrium sweep.
b. aortic valve to mitral valve sweep.
c. left ventricular apex to the aorta sweep.
d. tricuspid, pulmonic, aortic and mitral valve sweep.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000541
Echocardiography can be helpful in the diagnosis of infect endocarditis if:

a. late closure of the mitral valve is shown.
b. a vegetation is recorded.
c. fibrosis is demonstrated.
d. calcifications are shown.

*|IL017T|IL|0688|MC|D |188|C1|0|D|000542
In patients with mitral stenosis, the echocardiogram shows the C point of the anterior mitral leaflet to correspond with the:

a. E point.
b. second heart sound.
c. opening snap.
d. first sound.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000543
Atrial septal defect is characterized echocardiographically by:

a. a small right ventricular diameter.
b. paradoxical motion of the interventricular septum.
c. evidence of communication between the atria.
d. a large left ventricular diameter.

*|IL017T|IL|0688|MC|D |188|C1|0|C|000544
Respiratory interference can be reduced in echocardiography by:

a. turning the patient to a lateral decubitus position.
b. having the patient breath more deeply.
c. moving the transducer to a lower interspace.
d. having the patient perform a Valsalva manuever.

*|IL017T|IL|0688|MC|D |188|C1|0|C|000545
In M-mode echocardiography, the first moving band of echoes seen behind the chest wall is thought to represent the:

a. aortic root.
b. tricuspid valve.
c. anterior free wall of the right ventricle.
d. posterior free wall of the left ventricle.

*|IL017T|IL|0688|MC|D |188|C1|0|A|000546
The most common echographic finding in aortic regurgitation is:

a. diastolic fluttering of the mitral valve.
b. notching of the aortic valve.
c. a ski slope appearance of the mitral valve.
d. systolic fluttering of the aortic valve.

*|IL017T|IL|0688|MC|D |188|C1|0|D|000547
The echographic pattern produced by the aortic valve leaf is a:

a. W configuration.
b. M configuration.
c. diamond-shaped pattern.
d. boxlike pattern.

*|IL017T|IL|0688|MC|D |188|C1|0|B|000548
To demonstrate all four cardiac chambers in two-dimensional echocardiography, the transducer is placed at the:

a. interventricular septum.
b. apex.
c. mitral valve.
d. tricuspid valve.

*|IL017T|IL|0688|MC|D |188|C1|0|A|000549
In echocardiography, the left sternal border position of the transducer is known as the:

a. parasternal.
b. sternal.
c. retrosternal.
d. diasternal.

*|IL017T|IL|0688|MC|D |189|C1|0|A|000550
At the time of an IVC injection, the patient MAY experience all of the following EXCEPT:

a. chill.
b. hot flash.
c. dizziness.
d. metallic taste.

*|IL017T|IL|0688|MC|D |189|C1|0|D|000551
The time of an IVC injection until maximum opacification occurs usually requires:

a. 5-10 minutes.
b. 10-20 minutes.
c. 20-30 minutes.
d. 30-40 minutes.

*|IL017T|IL|0688|MC|D |189|C1|0|B|000552
Another name for midcoronal plane is the:

a. transverse process.
b. midaxillary plane.
c. saggital plane.
d. vertical plane.

*|IL017T|IL|0688|MC|D |190|C1|0|B|000553
The sonographic finding of mucosal thickening in the bladder near a pelvic tumor is suggestive of:

a. lymph node enlargement.
b. bladder atrophy.
c. pelvic inflammatory disease.
d. invasion of the bladder.

*|IL017T|IL|0688|MC|D |190|C1|0|A|000554
The position of the uterus to the urinary bladder is:

a. posterior.
b. anterior.
c. inferior.
d. distal.

*|IL017T|IL|0688|MC|D |191|C1|0|D|000555
The strongest echo of any normal cardiac structure is produced by the:

a. chordae tendineae.
b. right ventricular cavity.
c. mitral valve.
d. pericardium.

*|IL017T|IL|0688|MC|D |191|C1|0|D|000556
For assessing peripheral vasculature, real-time scanning is combined with:

a. focal zoning.
b. increased density.
c. mechanical sector scanning.
d. doppler flow analysis.

*|IL017T|IL|0688|MC|D |191|C1|0|A|000557
A cystic mass in the pelvis:

a. is highly transonic.
b. shows variable internal echoes.
c. is opaque.
d. will show solid areas projecting from its walls.

*|IL017T|IL|0688|MC|D |192|C1|0|A|000558
The body part considered a small part scan is the:

a. kidney.
b. liver.
c. head.
d. fetus.

*|IL017T|IL|0688|MC|D |192|C1|0|D|000559
The frequency transducer MOST commonly used for small parts scans is:

a. 2.25 MHz.
b. 3.5 MHz.
c. 4.0 MHz.
d. 5.0 MHz.

*|IL017T|IL|0688|MC|D |193|C1|0|C|000560
The body part that would be observed in an ultrasound extremities scan is the:

a. breast.
b. aorta.
c. neoplasm.
d. placenta.

*|IL017T|IL|0688|MC|D |193|C1|0|B|000561
The ultrasound test is used to observe Baker's cysts on the:

a. breast.
b. extremities.
c. small parts.
d. needle localization.

*|IL017T|IL|0688|MC|D |194|C1|0|D|000562
Nipple shadow can be eliminated from a breast scan by changing the:

a. angle.
b. frequency.
c. pressure.
d. compression.

*|IL017T|IL|0688|MC|D |194|C1|0|B|000563
During an ultrasound scan, the breast can be distorted by too much:

a. speed.
b. pressure.
c. coupling media.
d. transducer focus.

*|IL017T|IL|0688|MC|D |195|C1|0|C|000564
The only reliable methods for determining the exact malignancy of a breast mass are excisional biopsy and:

a. mammography.
b. tomography.
c. needle biopsy.
d. B-mode ultrasound scan.

*|IL017T|IL|0688|MC|D |195|C1|0|C|000565
A biopsy transducer is characterized by the:

a. concave shape.
b. ultrasonic frequency.
c. hole in the center.
d. size and angulation.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000566
In an ultrasonic assessment of the left ventricular function, the echoes from the endocardium and epicardium may be differentiated because the:

a. epicardium has a greater systolic slope.
b. epicardium has a greater excursion.
c. epicardium produces stronger echoes when the sensitivity is decreased.
d. endocardium has a greater diameter.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000567
The placenta is developed by the:

a. fourth week of gestation.
b. eighth week of gestation.
c. tenth week of gestation.
d. twelfth week of gestation.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000568
Fetal echoes are seen within the gestational sac by the:

a. second week.
b. fourth week.
c. sixth week.
d. eighth week.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000569
The preferred test of fetal maturity in diabetic mothers is the:

a. alpha fetoprotein.
b. L/S ratio.
c. HPL.
d. BPD.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000570
The amount of amniotic fluid produced in late pregnancy is:

a. 400 to 800 cc.
b. 600 to 1400 cc.
c. 800 to 1200 cc.
d. 20 to 40 ml.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000571
The spleen is normally a hematopoietic organ during the:

a. fetal life.
b. neonate life.
c. early childhood.
d. adolescence.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000572
If the fetal spine appears kinked or incomplete in a longitudinal section, this could signify:

a. spondylolisthesis.
b. scoliosis.
c. spina bifida.
d. lordosis.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000573
Ultrasonically, the MOST common condition confused with ectopic pregnancy is:

a. a missed abortion.
b. a adnexal mass.
c. a hydatidiform mole.
d. an intrauterine pregnancy with a corpus luteum cyst.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000574
In cases of third trimester bleeding, the prime condition that must be ruled out is:

a. hydramnios.
b. fetal hydrops.
c. placenta previa.
d. abruptio placenta.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000575
The preferred method for examination of a gravid female is:

a. fetography.
b. radiography.
c. sonography.
d. placentography.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000576
In early pregnancy, the amniotic sac is surrounded by the:

a. amniotic space.
b. chorionic space.
c. decidual space.
d. placental space.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000577
The shape of most placentas from the twelfth to the twentieth week of gestation is:

a. thick, rounded.
b. asymmetrical planoconcave.
c. symmetrical planoconcave.
d. elongated.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000578
Measurement of the placenta is easiest when presentation is:

a. anterior.
b. fundal.
c. posterior.
d. lateral.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000579
To determine the total number of fetal hearts, the ultrasound method used is:

a. spiral scanning.
b. triangulation.
c. transversing.
d. rotation.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000580
Pseudocyesis is the medical term for:

a. early pregnancy.
b. false pregnancy.
c. late pregnancy.
d. probable pregnancy.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000581
The ultrasound technique that has been 100% reliable in the diagnosis of fetal death is:

a. real-time scanning.
b. doppler.
c. M-mode scanning.
d. audio format.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000582
The condition in which the fertilized ovum is implanted in the fallopian tube is the:

a. hydatidiform mole.
b. ectopic pregnancy.
c. blighted ovum.
d. hydramnios.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000583
Withdrawal of amniotic fluid may be impossible if the:

a. placenta is large and anterior.
b. placenta is large and posterior.
c. pregnancy is associated with polyhydramnios.
d. total intrauterine volume is small.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000584
The fetal head CANNOT be readily palpatated prior to:

a. 14 weeks gestation.
b. 18 weeks gestation.
c. 20 weeks gestation.
d. 24 weeks gestation.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000585
In early pregnancy, a midline echo which extends from the front to the back of the fetal skull is related to the:

a. interhemispheric sulcus or the falx cerebri.
b. corpus callosum or the third ventricle.
c. hypothalamus or the fourth ventricle.
d. septum pellucidum or the precentral gyrus.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000586
Length x width x thickness x 0.5233. This formula is used to determine the:

a. placental growth using the planoconvex volume.
b. uterine volume.
c. gestational age from the biparietal diamenter.
d. fetal weight from the fetal abdominal circumference.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000587
The Frank Breech position is BEST described as:

a. the fetus is in the transverse lie, abdomen presenting.
b. breech presentation, legs flexed upon the thighs.
c. breech presentation, both feet presenting.
d. breech presentation, legs extended, and the thighs may be flexed upon the abdomen.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000588
Obstetrical ultrasound is performed in the range of:

a. 1 to 2 MHz.
b. 1 to 10 MHz.
c. 2 to 5 MHz.
d. 4 to 6 MHz.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000589
The MOST common origin of an extrauterine mass is the:

a. cervix.
b. ovary.
c. lymph nodes.
d. oviducts.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000590
The birth weight for a normal fetus at term should be at least:

a. 1000 grams.
b. 2000 grams.
c. 2500 grams.
d. 5000 grams.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000591
The normal period of gestation is approximately:

a. 200 days.
b. 225 days.
c. 240 days.
d. 280 days.

*|IL017T|IL|0688|MC|D |196|C1|0|#|000592
The crown-rump length measurement can be obtained on a fetus up to:

a. 7 weeks of gestation.
b. 9 weeks of gestation.
c. 12 weeks of gestation.
d. 14 weeks of gestation.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000593
The number of weeks after the last menstrual period that amniocentesis for the purpose of prenatal diagnosis can be performed is:

a. 10-12 weeks.
b. 12-13 weeks.
c. 15-16 weeks.
d. 18-20 weeks.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000594
The fetal position which has a higher incidence of cord prolapse is the:

a. partial breech.
b. complete breech.
c. footling breech.
d. Frank breech.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000595
During the last trimester of a normal pregnancy, the total intrauterine volume:

a. remains the same.
b. increases.
c. decreases.
d. is directly proportional to the biparietal diameter.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000596
The fine membrane which retains the fluid around the fetus is the:

a. placenta.
b. amniotic sac.
c. chorion.
d. chorionic plate.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000597
The MOST common cause of abdominal distention in the fetus is:

a. exomphalos.
b. "prune belly".
c. ascites.
d. a mesenteric cyst.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000598
A condition which may occur when a dead fetus is allowed to remain in the uterus over a long period of time is:

a. hydrops fetalis.
b. hypofibrinogenemia.
c. hypochloremia.
d. erythroblastosis fetalis.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000599
The oldest and MOST commonly used fetal measurement is:

a. uterine volume.
b. crown-rump length.
c. whole-body volume.
d. cephalometry.

*|IL017T|IL|0688|MC|D |196|C1|0|A|000600
A dark line, usually seen centrally within the uterus, is the:

a. endometrial line.
b. myometrial line.
c. cervical line.
d. decidual line.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000601
The number of weeks of gestation that the fetal head can be visualized ultrasonically is:

a. 6-8 weeks.
b. 8-10 weeks.
c. 8-12 weeks.
d. 10-12 weeks.

*|IL017T|IL|0688|MC|D |196|C1|0|C|000602
After the last menstrual period, pregnancy can be diagnosed by ultrasound within:

a. 2-3 weeks.
b. one month.
c. 5-6 weeks.
d. 8-10 weeks.

*|IL017T|IL|0688|MC|D |196|C1|0|B|000603
The MOST common renal abnormality in the fetus is:

a. absent kidney.
b. polycystic kidney.
c. nephroblastoma.
d. toxoplasmosis.

*|IL017T|IL|0688|MC|D |196|C1|0|D|000604
An intrauterine transfusion is employed in case of:

a. a pregnancy in which the female has diabetes mellitus.
b. a fetus with congenital anomaly.
c. a fetus with sickle cell disease.
d. an Rh-sensitized pregnancy and erythroblastosis fetalis.

*|IL017T|IL|0688|MC|D |197|C1|0|C|000605
A-mode displays amplitude and:

a. time.
b. intensity.
c. distance.
d. attenuation.

*|IL017T|IL|0688|MC|D |197|C1|0|A|000606
The reference plane for scans of the head, neck, and thorax is known as the:

a. A plane.
b. B plane.
c. C plane.
d. D plane.

*|IL017T|IL|0688|MC|D |197|C1|0|D|000607
The MOST important factor in determining the frequency of medical transducer is:

a. wavelength.
b. medium.
c. milliwatts.
d. crystal thickness.

*|IL017T|IL|0688|MC|D |197|C1|0|A|000608
The type of real-time scanner that utilizes multiple transducer elements and electronic delay circuitry to create a sector-shaped image is:

a. phased-array.
b. linear-array.
c. mechanical array.
d. fontanelles array.

*|IL017T|IL|0688|MC|D |197|C1|0|B|000609
The absence of a sound distal to a reflector is called:

a. cystic mass.
b. acoustic shadow.
c. compound scanning.
d. system gain.

*|IL017T|IL|0688|MC|D |198|C1|0|C|000610
The percent of all diagnosed cancer patients that will be treated with radiation is:

a. 30 percent.
b. 50 percent.
c. 70 percent.
d. 90 percent.

*|IL017T|IL|0688|MC|D |198|C1|0|B|000611
The term "external" means:

a. on the inside.
b. on the outside.
c. turned outward.
d. turned inward.

*|IL017T|IL|0688|MC|D |198|C1|0|D|000612
The amount of x- or gamma radiation that produces 1 electrostatic unit of charge as a result of interaction in 1 cc of dry air at standard temperature and pressure is a::

a. rad.
b. rem.
c. range.
d. roentgen.

*|IL017T|IL|0688|MC|D |199|C1|0|A|000613
The MAIN purpose of conducting localization films for intercavitary applicators of implants is to verify:

a. positioning.
b. size.
c. dosage.
d. purpose.

*|IL017T|IL|0688|MC|D |199|C1|0|D|000614
Information concerning a radionuclide implant can be obtained from the:

a. ALARA.
b. radiation safety officer.
c. NCRP report.
d. implant label.

*|IL017T|IL|0688|MC|D |199|C1|0|B|000615
A radioactive implant label is located on the:

a. implant.
b. patient's chart.
c. patient's bed.
d. patient's body.

*|IL017T|IL|0688|MC|D |200|C1|0|B|000616
Present probe recommendations suggest that the sodium iodine crystal be not less than 1 inch in diameter with a thickness:

a. .05 inches.
b. 1.0 inches.
c. 1.5 inches.
d. 2.0 inches.

*|IL017T|IL|0688|MC|D |200|C1|0|C|000617
The MAJOR advantage to using a well counter to count activity in biologic samples is:

a. speed.
b. convenience.
c. efficiency.
d. cost.

*|IL017T|IL|0688|MC|D |200|C1|0|A|000618
Which of the following is a source of background radiation?

a. nuclear waste
b. cosmic rays
c. nuclides
d. radionuclides

*|IL017T|IL|0688|MC|D |201|C1|0|B|000619
The effective half-life can NEVER be longer than the:

a. biological half-life.
b. physical half-life.
c. physical life.
d. constant half-life.

*|IL017T|IL|0688|MC|D |201|C1|0|B|000620
The biologic half-life (Tb) is the time required for the body to eliminate, by its regular process, one half of any:

a. stable substance.
b. radioactive substance.
c. static substance.
d. oblique substance.

*|IL017T|IL|0688|MC|D |202|C1|0|A|000621
If a patient has a low plasma volume, the hematocrit count will be falsely:

a. elevated.
b. lowered.
c. radioactive.
d. thinned.

*|IL017T|IL|0688|MC|D |202|C1|0|B|000622
In a well-run laboratory MOST of the radiation dose to technologists is due to:

a. injecting patients.
b. radiation from patients.
c. eluting generators.
d. drawing up doses.

*|IL017T|IL|0688|MC|D |203|C1|0|D|000623
The time required for the body to eliminate one half of the dose of any substance by the regular process of elimination is called:

a. physical decay.
b. biological decay.
c. physical half-life.
d. biological half-life.

*|IL017T|IL|0688|MC|D |203|C1|0|C|000624
All of the following are considered a principle source of biological elimination EXCEPT:

a. urine.
b. feces.
c. saliva.
d. perspiration.

*|IL017T|IL|0688|MC|D |204|C1|0|B|000625
Radiation dose calculations are COMMONLY done using the:

a. absolute activity model.
b. absorbed fraction method.
c. gamma-beta ratio model.
d. pharmaceutical energy method.

*|IL017T|IL|0688|MC|D |204|C1|0|B|000626
One of the MOST common radio-sensitizers is:

a. protein.
b. oxygen.
c. carbon dioxide.
d. calcium.

*|IL017T|IL|0688|MC|D |204|C1|0|B|000627
After a radionuclide is ingested by the patient, its thyroidal metabolic pathway is:

a. gut absorption, plasma, body tissues, protein binding in circulation, thyroidal trapping, thyroidal organification, thyroidal secretion, blood stream.
b. gut absorption, plasma, thyroidal trapping, thyroidal organification, thyroidal secretion, protein binding in circulation, body tissues.
c. gut absorption, protein binding in circulation, thyroidal organification, thyroidal secretion, body tissues.
d. gut absorption, blood stream, thyroidal organification, body tissues, thyroidal secretion, protein binding in circulation.

*|IL017T|IL|0688|MC|D |205|C1|0|C|000628
The MAIN source of radioactivity in the body is:

a. carbon 14.
b. tritium.
c. potassium 40.
d. strontium 90.

*|IL017T|IL|0688|MC|D |205|C1|0|C|000629
When measuring maximum exposure rate at a specified distance from patients who have received therapeutic amounts of gamma-emitting radionuclides, the measurement is usually made at:

a. the body surface.
b. the foot of the patient's bed.
c. 1 meter from the patient.
d. 5 meters from the patient.

*|IL017T|IL|0688|MC|D |205|C1|0|#|000630
In order to visualize the femur of the fetus, the angle of degrees from the longitudinal axis of the fetus the ultrasound transducer should be rotated to is:

a. 25-35 degrees.
b. 40-60 degrees.
c. 45-90 degrees.
d. 90-120 degrees.

*|IL017T|IL|0688|MC|D |206|C1|0|B|000631
A plot of tracer binding verses the known concentrations of test substance in a set of standard, usually prepared by serial dilution or incremental addition is called:

a. curve fitting.
b. standard curve.
c. hyperbolic curve.
d. competitive binding.

*|IL017T|IL|0688|MC|D |206|C1|0|D|000632
When plotting assay results, the percent bound or counts per minute is plotted on the:

a. A-axis.
b. B-axis.
c. X-axis.
d. Y-axis.

*|IL017T|IL|0688|MC|D |207|C1|0|D|000633
The purpose of reviewing a quality control graph is to identify:

a. high value.
b. low value.
c. random value.
d. out-of-control value.

*|IL017T|IL|0688|MC|D |207|C1|0|B|000634
When reviewing quality control graphs, the technologist should note points on the Y-axis that are:

a. + - 1 standard deviations.
b. + - 1.5 standard deviations.
c. + - 2 standard deviations.
d. + - 2.5 standard deviations.

*|IL017T|J|0688|MC|D |208|C1|0|C|000635
When performing a radioassay study, the percent bound yield must be within how many standard deviations of the mean for that particular assay?

a. + - 10
b. + - 15
c. + - 25
d. + - 30

*|IL017T|IL|0688|MC|D |208|C1|0|B|000636
The reagents and serums stabilize at:

a. refrigerator temperature.
b. room temperature.
c. 68 degrees.
d. 82 degrees.

*|IL017T|IL|0688|MC|D |209|C1|0|D|000637
The piece of equipment used to separate serum from red blood cells is a:

a. vortex.
b. precision pipette.
c. autocave.
d. centrifuge.

*|IL017T|IL|0688|MC|D |209|C1|0|D|000638
Serum sampleS, which are NOT to be used immediately, should be frozen at:

a. 0 degree Celcius.
b. 5 degrees Celcius.
c. 10 degrees Celcius.
d. 20 degrees Celcius.

*|IL017T|IL|0688|MC|D |209|C1|0|A|000639
When centrifuging blood samples at 1400 g's, the centifuge should run for:

a. 10 minutes.
b. 30 minutes.
c. 45 minutes.
d. 60 minutes.

*|IL017T|IL|0688|MC|D |210|C1|0|D|000640
The degree of blackening of a film by the x-ray beam is dependent on:

a. low grid ratio.
b. speed of the film.
c. size of the focal spot.
d. photon energy reaching the film.

*|IL017T|IL|0688|MC|D |210|C1|0|B|000641
Overdevelopment of a radiograph is BEST described as:

a. decreased contrast and decreased density.
b. decreased contrast and increased density.
c. increased contrast and decreased density.
d. increased contrast and increased density.

*|IL017T|IL|0688|MC|D |210|C1|0|A|000642
A radiograph showing a complete lack of penumbra would be:

a. sharp in detail.
b. low in density.
c. high in contrast.
d. distorted.

*|IL017T|IL|0688|MC|D |210|C1|0|B|000643
A criterion for attaining satisfactory radiographic quality is:

a. minimum sharpness and true shape of the image.
b. maximum sharpness and true shape.
c. densities are controlled by kilovoltage primarily.
d. contrast is controlled be milliampere-seconds primarily.

*|IL017T|IL|0688|MC|D |211|C1|0|B|000644
If there are too many echoes occurring uniformly throughout the scan, the setting that should be varied is:

a. increase system gain.
b. decrease system gain.
c. increase pulse generator.
d. decrease pulse generator.

*|IL017T|IL|0688|MC|D |211|C1|0|B|000645
When using AIUM scan presentation conventions, a supine transverse scan can be viewed with the patient's right side on the:

a. right center of the image.
b. left center of the image.
c. right top of the image.
d. left top of the image.

*|IL017T|IL|0688|MC|D |212|C1|0|B|000646
All of the following are means of nuclear medicine data acquisitions EXCEPT:

a. static.
b. acoustic.
c. dynamic.
d. list.

*|IL017T|IL|0688|MC|D |212|C1|0|D|000647
All of the following are normal means of recording nuclear medicine test results EXCEPT:

a. graphs.
b. computer.
c. radiographs.
d. photographs.

*|IL017T|IL|0688|MC|D |213|C1|0|C|000648
The thickness of a patient is measured using a:

a. tape measure.
b. metal rule.
c. calipers.
d. graduated rod.

*|IL017T|IL|0688|MC|D |213|C1|0|C|000649
The purpose of portal/verification films is to verify beam:

a. dosage.
b. scatter.
c. location.
d. intensity.

*|IL017T|IL|0688|MC|D |214|C1|0|D|000650
What is needed to verify treatment area from portal films?

a. patient
b. treatment block
c. treatment plan
d. simulation radiographs

*|IL017T|IL|0688|MC|D |214|C1|0|D|000651
Simulation radiographs are obtained using a:

a. portable x-ray machine.
b. computed tomography machine.
c. external beam radiation treatment machine.
d. external beam radiation simulation machine.

*|IL017T|IL|0688|MC|D |214|C1|0|B|000652
To simulate the treatment beam, an external beam radiation simulation machine uses:

a. gamma rays.
b. X-ray.
c. ultraviolet rays.
d. white light rays.

*|IL017T|IL|0688|MC|E |215|C1|0|D|000653
An area is considered contaminated and subject to decontamination procedure when any wipe test yields a reading of:

a. 10 dpm/cm squared.
b. 50 dpm/cm squared.
c. 100 dpm/cm squared.
d. 200 dpm/cm squared.

*|IL017T|IL|0688|MC|E |215|C1|0|B|000654
The Nuclear Regulatory Commission recommends wipe tests for all laboratories and other areas in which radioactive materials are handled routinely be performed:

a. daily.
b. weekly.
c. semi-weekly.
d. monthly.

*|IL017T|IL|0688|MC|E |216|C1|0|C|000655
The room in which the Xenon is used should have:

a. high pressure.
b. low pressure.
c. positive pressure.
d. negative pressure.

*|IL017T|IL|0688|MC|E |216|C1|0|D|000656
The primary filtering agent in a Xenon trap is:

a. cotton.
b. paper.
c. fiber.
d. charcoal.

*|IL017T|IL|0688|MC|E |216|C1|0|D|000657
Title 10 of the Code of Federal Regulations Part 20.106(a), restricts the amount of radioactive gas in an unrestricted area to a concentration of:

a. .00001 MCi/ml.
b. .0000001 MCi/ml.
c. .00003 MCi/ml.
d. .0000003 MCi/ml.

*|IL017T|IL|0688|MC|E |216|C1|0|A|000658
Xenon at room and biologic temperature exist in the form of a:

a. gas.
b. solid.
c. liquid.
d. crystal.

*|IL017T|IL|0688|MC|E |217|C1|0|B|000659
Radioactive decontamination of the skin may be effectively carried out by the use of:

a. alcohol.
b. soap and water.
c. an abrasive cleaner.
d. an alkaline material.

*|IL017T|IL|0688|MC|E |217|C1|0|D|000660
It is recommended that a radiation survey in the "hot" laboratory be conducted:

a. annually.
b. monthly.
c. weekly.
d. daily.

*|IL017T|IL|0688|MC|E |218|C2|0|B|000661
At a given time, there is a collection of 1,000 atoms in a radionuclide sample. Fifty of these atoms disintegrate in the next five seconds. The activity of this sample is:

a. 5 dis/sec.
b. 10 dis/sec.
c. 250 dis/sec.
d. 5000 dis/sec.

*|IL017T|IL|0688|MC|E |218|C1|0|D|000662
In general, a wipe test procedure must be performed on any shipment received by the Nuclear Medicine Department containing radionuclides greater than 1 mCi and having physical half-lives greater than:

a. 2 days.
b. 8 days.
c. 15 days.
d. 30 days.

*|IL017T|IL|0688|MC|E |218|C1|0|B|000663
The factor expressing the relative effectiveness of a given particle based on its linear energy transfer is known as the:

a. F-factor.
b. quality factor.
c. linear attenuation coefficient.
d. dose equivalent.

*|IL017T|IL|0688|MC|E |218|C1|0|B|000664
Department of Transportation regulations require that radioactive shipments be packaged so that the radiation intensity at 3 feet from the surface of the package does not exceed:

a. 2 millirems per hour.
b. 10 millirems per hour.
c. 50 millirems per hour.
d. 200 millirems per hour.

*|IL017T|IL|0688|MC|E |219|C1|0|C|000665
When radiation contamination of the body occurs, hot water on the contaminated area should be avoided because it:

a. stops circulation.
b. slows circulation.
c. increases circulation.
d. fluctuates circulation.

*|IL017T|IL|0688|MC|E |219|C1|0|D|000666
All of the following shipments would be wipe-tested upon receipt by a nuclear medicine department except:

a. greater than 100 mCi iodine 131.
b. greater than 100 mCi "instant" technetium 99m.
c. greater than 1 mCi selenium 75.
d. greater than 100 mCi iodine 125.

*|IL017T|IL|0688|MC|E |219|C1|0|C|000667
In case of major radioactive spill, the Nuclear Regulatory Commission must be notified immediately if:

a. any dose limit is exceeded.
b. there is release of activity 500 times prescribed limits.
c. there is exposure of the body.
d. there is loss of a working week.

*|IL017T|IL|0688|MC|E |220|C1|0|C|000668
If a package for radioactive material is found to be contaminated after the contents have been removed, the receiver must:

a. notify the Nuclear Regulatory Commission.
b. notify the Radiation Safety officer.
c. treat the package as radioactive waste.
d. store the material as usual, and notify the postal service.

*|IL017T|IL|0688|MC|E |221|C1|0|D|000669
An example of a radiation survey instrument is a:

a. pocket dosimeter.
b. film badge.
c. well counter.
d. cutie pie.

*|IL017T|IL|0688|MC|E |221|C1|0|C|000670
The instrument used to calibrate X-ray equipment is a:

a. proportional counter.
b. Geiger-Muller detector.
c. Victoreen condenser R-meter.
d. ionization chamber-type survey meter.

*|IL017T|IL|0688|MC|E |221|C1|0|B|000671
The exposure rate for a radiation survey instrument must be calibrated within the percentage of the true exposure, which is:

a. t-5.
b. t-10.
c. t-15.
d. t-20.

*|IL017T|IL|0688|MC|E |221|C1|0|A|000672
The activity of the radioactive point source for a G-M survey meter is considered adequate at a level of:

a. 1mCi.
b. 5mCi.
c. 15mCi.
d. 25mCi.

*|IL017T|IL|0688|MC|E |222|C1|0|D|000673
A CAUTION-RADIATION AREA sign must be posted where prevailing exposure rate is more than:

a. 2 mR/hr.
b. 3 mR/hr.
c. 4 mR/hr.
d. 5 mR/hr.

*|IL017T|IL|0688|MC|E |222|C1|0|B|000674
All of the following are purposes of radiation monitoring EXCEPT:

a. detection of radioactive contamination.
b. evaluation of shielding arrangement.
c. assessment of the decay constant of the nuclides being monitored.
d. assessment of radiation work area safety.

*|IL017T|IL|0688|MC|E |222|C1|0|C|000675
In areas where the radiation intensity would be in excess of 100mR in any one hour, the radiation warning sign should read:

a. "Caution-Radioactive Materials".
b. "Caution-Radiation Area".
c. "Caution-High Radiation Area".
d. "Caution-Radiation Hazard".

*|IL017T|IL|0688|MC|E |223|C2|0|B|000676
A survey meter measurement at the bedside of a patient recently treated by radionuclide therapy shows a reading of 24 mR/hr. The length of time that a visitor could remain at the point where the reading was taken is:

a. 2 minutes.
b. 5 minutes.
c. 30 minutes.
d. 60 minutes.

*|IL017T|IL|0688|MC|E |223|C1|0|B|000677
All of the following are considered "hot trash" EXCEPT:

a. decayed generators.
b. RIA test material.
c. disposable pipettes.
d. discarded nuclides.

*|IL017T|IL|0688|MC|E |223|C1|0|C|000678
Radioactive waste disposal records MUST be maintained until the disposal is:

a. complete.
b. decayed.
c. approved by licensing agency.
d. approved by radiation officer.

*|IL017T|IL|0688|MC|E |223|C1|0|A|000679
A receptacle having a double liner and labeled "Hot trash-Do not empty" is provided in the nuclear medicine department for:

a. contaminated materials.
b. RIA test materials.
c. cold trash.
d. excreta from individuals.

*|IL017T|IL|0688|MC|E |224|C1|0|C|000680
The term "radioisotope" means:

a. permitting partial penetration by x-rays.
b. not permitting penetration by radiation.
c. radioactive forms of chemicals.
d. property of spontaneous emission of radiation.

*|IL017T|IL|0688|MC|E |224|C1|0|A|000681
Another name for an isotope is:

a. nuclide.
b. isotone.
c. isobar.
d. neutron.

*|IL017T|IL|0688|MC|E |224|C1|0|D|000682
The number of radionuclides that have been produced artificially is:

a. 270.
b. 400.
c. 812.
d. 900.

*|IL017T|IL|0688|MC|F |225|C1|0|D|000683
A radiologic professional organization is:

a. NRC.
b. FDA.
c. HHS.
d. ARRT.

*|IL017T|IL|0688|MC|F |225|C1|0|D|000684
The radiologic field that does NOT need ARRT certification is:

a. Radiography.
b. Nuclear Medicine.
c. Radiation Therapy.
d. Diagnostic Medical Sonography.

*|IL017T|IL|0688|MC|F |225|C1|0|A|000685
All of the following are ultrasound professional organizations EXCEPT:

a. ASRT.
b. AIUM.
c. ASUTS.
d. SDMS.

*|IL017T|IL|0688|MC|F |226|C1|0|B|000686
Minimum qualifications for sonographers are a high school diploma and a allied health background in an AMA accredited allied health program of at least:

a. 1 year.
b. 2 years.
c. 3 years.
d. 4 years.

*|IL017T|IL|0688|MC|F |226|C1|0|C|000687
The number of continuing education points per year a radiologic technologist is required to earn is:

a. 6 points.
b. 8 points.
c. 12 points.
d. 14 points.

*|IL017T|IL|0688|MC|F |227|C1|0|C|000688
A technologist should try to arrive at a meeting:

a. right on time.
b. 5 minutes late.
c. 15 minutes early.
d. whenever they can get there.

*|IL017T|IL|0688|MC|F |227|C1|0|D|000689
A benefit of participating in a professional organization meeting is:

a. browny points.
b. practice parliamentary procedures.
c. leave work early.
d. interaction with other technologists.

*|IL017T|IL|0688|MC|F |228|C1|0|A|000690
An in-service workshop is directed toward:

a. employed technologists.
b. students studying radiology.
c. clinical students.
d. people interested in radiology.

*|IL017T|IL|0688|MC|F |228|C1|0|D|000691
To receive continuing education points, a technologist should summit an in-service workshop participation form to the:

a. professional organization.
b. ARRT.
c. hospital administrator.
d. department director.

*|IL017T|IL|0688|MC|F |229|C1|0|C|000692
The MOST recent development for radiologic technology users would be:

a. ultrasound.
b. x-ray.
c. magnetic resonance.
d. computerized tomography.

*|IL017T|IL|0688|MC|F |229|C1|0|A|000693
For technologists, the MOST convenient source of new developments in the radiologic technology field is:

a. magazines/journals.
b. professional organizations.
c. educational programs.
d. in-service workshops.

*|IL017T|IL|0688|MC|F |230|C1|0|C|000694
In a clinical situation, a clinical student is:

a. always allowed to perform solo examinations.
b. sometimes allowed to perform solo examinations.
c. never allowed to perform solo examinations.
d. left alone with the patients.

*|IL017T|IL|0688|MC|F |230|C1|0|D|000695
The FIRST thing a technologist should do after getting a clinical experience student is to:

a. discuss work schedule.
b. explain procedures.
c. answer student's questions.
d. explain hospital policies.

*|IL017T|IL|0688|MC|F |231|C1|0|D|000696
Notice of in-service workshops should be posted at least:

a. 2 days in advance.
b. 5 days in advance.
c. 10 days in advance.
d. 14 days in advance.

*|IL017T|IL|0688|MA|A |013|C1|0| |000001
ANSWERS: 1-f, 2-b, 3-k, 4-e, 5-i, 6-c, 7-a, 8-h, 9-d
Match the radiation protection terminology with the terms' definition.

TERMS	DEFINITION
1. millirem	a. radiation monitoring device utilizing lithium fluoride as the sensing material
2. milliroentgens	b. measure used to determine radiation exposure from x-ray source
3. millirads	c. the whole body maximum permissible dose of radiation
4. Roentgen	d. radiation monitoring device which measures electrical charge
5. ALARA	e. basic radiation unit of exposure
6. MPD	f. measure used to determine technologist occupational radiation exposure
7. TLD	g. name of radiologic technologist professional organization
8. film badge	h. radiation monitoring device that records radiation exposure utilizing mental filters and film packet
9. pocket dosimeter	i. term used when refering to technologist and patient radiation exposure (as low as reasonably possible)
	j. Accumulated Level of Acceptable Radiation Permissible
	k. measure used to determine radiation exposure recieved by the patient

*|IL017T|IL|0688|MA|A |037|C1|0| |000002
ANSWERS: 1-e, 2-b, 3-c, 4-d, 5-c
Match the anatomical area with the relating permissible dose (MPD) for one year. (The answers may be used more than once.)

ANATOMICAL AREA	MPD FOR ONE YEAR
1. hands	a. .05 rem
2. eye lens	b. 5 rem
3. thyroid	c. 15 rem
4. forearms	d. 30 rem
5. skin (other than hands)	e. 75 rem

*|IL017T|IL|0688|MA|B |058|C1|0| |000003
ANSWERS: 1-e, 2-a, 3-b, 4-d, 5-c
Match the radiation position heading with the positioning phrase.

RADIOGRAPHIC POSITION HEADING	POSITIONING PHRASE
1. dorsal	a. bending of part
2. flexion	b. turned from AP or PA
3. oblique	c. moving away from midline
4. lateral recumbent	d. lying on side
5. abduction	e. toward the back

*|IL017T|IL|0688|MA|C |074|C1|0| |000004
ANSWERS: 1-c, 2-d, 3-e, 4-a,
Match the special procedure examination with the examination definition.

SPECIAL PROCEDURE	DEFINITION
1. myelography	a. demonstration of the joint spaces and surrounding tissues
2. angiocardiography	b. demonstration of the lower extremity circulatory system
3. aortography	c. demonstration of the central nervous system within the spinal cord
4. arthrography	d. demonstration of the heart and great vessels by means of contrast media and high-speed changers
	e. demonstration of the anatomy of the aorta

*|IL017T|IL|0688|MA|C |109|C1|0| |000005
ANSWERS: 1-c, 2-d, 3-a
Match the % of acoustic impedence with the media encountered.

% OF ACOUSTIC IMPEDENCE	MEDIA
1. 25.0%	a. air
2. 36.0%	b. skin
3. 99.9%	c. water
	d. mineral oil
	e. aqueous gel

*|IL017T|IL|0688|MA|C |110|C1|0| |000006
ANSWERS: 1-e, 2-c, 3-d, 4-f, 5-a
Match the transducer part with the part's function.

TRANDUCER PART	PART'S FUNCTION
1. dampening material	a. provides structual support for internal contents
2. acoustic insulation	b. protects the crystal
3. connector	c. prevents sound from reaching the transducer case
4. crystal	d. transmits electric signal to the crystal
5. housing	e. absorbs the ultrasonic energy that is directed backward
	f. changes shape and vibrates with electrical pulse

*|IL017T|IL|0688|MA|C |111|C1|0| |000007
ANSWERS: 1-a, 2-b, 3-c, 4-d, 5-e
Match the ultrasound display systems with the display functions.

DISPLAY SYSTEM	DISPLAY FUNCTION
1. oscilloscope	a. used to display A-mode sonography
2. T.V. monitor	b. used to display gray scale imaging
3. position monitor	c. used to maintain the orientation of the B-mode echo dots
4. strip-chart recorder	d. used to make hard copy of m-mode scan results
5. video camera	e. used to make hard copy of gray scale B-mode scan results
	f. used to make hard copy record of oscilloscope A-mode trace

*|IL017T|IL|0688|MA|C |112|C1|0| |000008
ANSWERS: 1-d, 2-a, 3-l, 4-e, 5-c, 6-j, 7-b, 8-h, 9-k
Match the radiographic parts with the characteristics of parts.

RADIOGRAPHIC PARTS	PARTS' CHARACTERISTICS
1. filament	a. positive charge
2. target	b. high metallic point
3. focusing cup	c. prevents oxidation
4. glass envelope	d. source of free electrons
5. vacuum	e. contains vacuum
6. copper	f. positive to negative
7. tungsten	g. negative charge
8. x-ray production	h. point of contact
9. direction of electron flow	i. low melting point
	j. good conductor of heat
	k. negative to positive
	l. focuses electron stream

*|IL017T|IL|0688|MA|C |113|C1|0| |000009
ANSWERS: 1-a, 2-c, 3-g, 4-e, 5-d
Match the material with the ultrasound velocity.

MATERIAL	VELOCITY
1. air	a. 348
2. fat	b. 1,480
3. bone	c. 1,500
4. blood	d. 1,540
5. soft tissue	e. 1,570
	f. 2,700
	g. 4,080

*|IL017T|IL|0688|MA|C |115|C1|0| |000010
ANSWERS: 1-e, 2-b, 3-c, 4-a, 5-d
Match the hard copy method with the ultrasound test it records.

METHOD	TEST
1. polaroid photographs	a. pulsed doppler
2. strip-chart recorder	b. M-mode
3. 8x10 singles emulsion film	c. gray scale B-mode
4. video camera	d. continous doppler
5. audio cassette tapes	e. A-mode trace

*|IL017T|IL|0688|MA|C |116|C1|0| |000011
ANSWERS: 1-e, 2-c, 3-b, 4-a
Match the quality control test with the relating scan explanation.

TEST	EXPLANATION
1. gray-scale dynamic range	a. Scan along top, side A of the phantom with all receiver controls at their lowest level.
2. time gain compensation	b. Scan along top of phantom delineating the equidistant rods along side D.
3. calibration and registration	c. Linear scan along top of phantom displaying the vertical evenly spaced wires.
4. system sensistivity	d. Linear scan along top of phantom with TBC off and overall gain set high.
	e. Any wire within the phantom can be used.

*|IL017T|IL|0688|MA|C |121|C1|0| |000012
ANSWERS: 1-a, 2-f, 3-c, 4-e, 5-b
Match the units of absorbed dose with the conversion factor.

DOSES	FACTORS
1. 1 millirad	a. 10 micrograys
2. 1 kilorad	b. 100 microrad
3. 1 rad	c. 10 millisgrays
4. 1 gray	d. 100 millirads
5. 1 microgray	e. 100 rad
	f. 10 grays

*|IL017T|IL|0688|MA|C |121|C1|0| |000013
ANSWERS: 1-e, 2-c, 3-a, 4-b, 5-d
Match the items in a decontamination kit with the items' purpose.

ITEMS	PURPOSE
1. warning tape and signs	a. safe handling of radioactive material
2. plastic bags, small	b. provides friction
3. foceps, tongs	c. shoe covers, wet containers
4. scouring powder	d. covering area after decontamination
5. chux	e. posting of the area
	f. sopping up radioactive material

*|IL017T|IL|0688|MA|C |123|C1|0| |000014
ANSWERS: 1-c, 2-b, 3-a, 4-d
Match the nuclide heading related with the transition phrase in column two.

NUCLIDE	TRANSITION
1. chromium 51	a. alpha decay
2. iodine 131	b. beta decay
3. radium 226	c. electron capture
4. carbon 11	d. positron decay

*|IL017T|IL|0688|MA|C |124|C1|0| |000015
ANSWERS: 1-a, 2-d, 3-d
Match the radionuclide with the radionuclides' half life.

RADIONUCLIDE	RADIONUCLIDES' HALF LIFE
1. iron 59	a. 78 hours
2. iodine 131	b. 8.06 days
3. gallium 67	c. 45 days
	d. 120 days

*|IL017T|IL|0688|MA|C |128|C1|0| |000016
ANSWERS: 1-c, 2-a, 3-e, 4-b, 5-d
Match the computer acquisition techniques with the techniques' function.

TECHNIQUE	FUNCTION
1. interpolation	a. utilizes spatial and temporal filters
2. smoothing	b. A row of data points are moved through the area on the image involved.
3. background correction	c. used to reduce the digital raster effect on a static image
4. slice profiles	d. allows visualization of a sma'l portion of the camera field of view
5. magnification mode	e. allows subtraction of counts from each pixel in the image

*|IL017T|IL|0688|MA|C |130|C1|0| |000017
ANSWERS: 1-f, 2-e, 3-d, 4-c, 5-b
Match the RIA key parameter with the parameter definition.

KEY PARAMETERS	PARAMETER DEFINITION
1. specificity	a. often called the reference range
2. sensitivity	b. ability to diagnose the patient's disease correctly
3. percision	c. detects all of the substance being assayed that is present in the sample
4. accuracy	d. the error associated with a result
5. clinical correlation	e. the smallest amount of unlabled ligand that can be distinguished for no ligand
	f. ability of the binder to react with one and only one ligand

*|IL017T|IL|0688|MA|C |136|C1|0| |000018
ANSWERS: 1-a, 2-b, 3-e, 4-d
Match the computer acquisition mode with the computer's functions.

MODE	FUNCTION
1. static	a. interpolation, smoothing, background correction, slice profiles and magnification mode
2. dynamic	b. smoothing, regions of interest and phase analysis
3. list	c. interpolation, phase analysis and edge detection
4. multigated	d. wall motion and edge detection
	e. matrix size and frame rate

*|IL017T|IL|0688|MA|C |160|C1|0| |000019
ANSWERS: 1-a, 2-c, 3-b, 4-e, 5-d
Match the following radiation therapy terms with the therapy definitions.

TERMS	DEFINTIONS
1. teletherapy	a. radiation therapy technique for which source of radiation is at same distance from the patient
2. brachytherapy	b. the design and monitoring of a technique for the precise application of a dose of ionizing radiation
3. dosimetry	c. placement of radioactive nuclides in or on neoplasm to deliver cancericidal dose
4. radiosensitivity	d. delivery of tumor dose over extended, uninterrupted time period
5. protraction	e. responsiveness of cells to radiation
	f. dividing of total planned dose into a number of smaller doses to be given over a longer time period

*|IL017T|IL|0688|MA|C |160|C1|0| |000020
ANSWERS: 1-f, 2-e, 3-d, 4-c, 5-b
Match the type of cancer with the radiation therapy treatment.

CANCER TYPE	TREATMENT
1. larynx	a. 7000 rads in 6-8 weeks
2. skin	b. 4500 rads though AP-PA ports
3. oral Cavity	c. 4500-5000 rads in 5 weeks
4. cervix	d. 6000 rads in 4 weeks
5. Hodgkin's disease	e. 5000 rads in 4 weeks
	f. 6500 rads in 6 weeks

*|IL017T|IL|0688|MA|D |164|C1|0| |000021
ANSWERS: 1-b, 2-d, 3-a, 4-c
Match the method of pelvimetry with the characteristics of that method.

METHODS	CHARACTERISTICS
1. Thomas	a. patient examined erect
2. Ball	b. special cassette, stereoscopic anterioposterior projections, and special marker
3. Colcher-Sussman	c. backrest, ruler, and lead grid with pinholes 1 cm. apart
4. Caldwell-Maloy	d. use of "pelvimeter" ruler

*|IL017T|IL|0688|MA|D |164|C1|0| |000022
ANSWERS: 1-b, 2-d, 3-e, 4-a, 5-c
Match the structure with the appropriate statement.

STRUCTURES	STATEMENT
1. intertubercular groove	a. appears at 2 months in boys
2. deltoid tuberosity	b. long head of biceps
3. trochlea	c. blood vessels
4. greater tuberosity	d. insertion of the deltoid muscle
5. nutrient foramen	e. articulates with the ulna

*|IL017T|IL|0688|MA|D |168|C1|0| |000023
ANSWERS: 1-b, 2-c, 3-e, 4-a, 5-e
Match the structure with the pathological condition.

STRUCTURES	CONDITIONS
1. stomach	a. hemorrhoids
2. duodenum	b. gastritis
3. cecum	c. annular pancreas
4. rectum	d. hiatal hernia
5. illeum	e. appendicitis
	f. Meckel's diverticulum

*|IL017T|IL|0688|MA|D |173|C1|0| |000024
ANSWERS: 1-a, 2-e, 3-b, 4-d, 5-c
Match the anatomical structure with the structure function.

STRUCTURES	FUNCTIONS
1. superior sagittal sinus	a. drains cerebrospinal fluid
2. cavernous sinus	b. drains into internal jugular veins
3. sigmoid sinus	c. may be site of an aneurysm
4. jugular bulb	d. is a baropressor center
5. great vein of Galen	e. surrounds pituitary gland

*|IL017T|IL|0688|MA|D |174|C1|0| |000025
ANSWERS: 1-a, 2-e, 3-c, 4-d, 5-b
Match the anatomical structure with the definition.

STRUCTURES	DEFINITIONS
1. pineal	a. third ventricle
2. habenula	b. seperates the lateral ventricles
3. choroid plexus	c. blood vessels
4. aqueduct	d. joins third and fourth ventricles
5. septum pellucidum	e. communication between hemispheres

*|IL017T|IL|0688|MA|D |188|C1|0| |000026
ANSWERS: 1-d, 2-c, 3-a, 4-e, 5-b
Match the heart structure with the heart location.

STRUCTURES	LOCATIONS
1. mitral valve	a. aorta
2. pulmonary valve	b. between right atrium and right ventricle
3. coronary valve	c. right ventricle
4. inferior vena cava	d. between left atrium and left ventricle
5. tricuspid valve	e. right atrium

*|IL017T|IL|0688|MA|D |192|C1|0| |000027
ANSWERS: 1-c, 2-b, 3-a, 4-d, 5-e
Match the reproductive structure with the corresponding structure.

REPRODUCTIVE STRUCTURE	CORRESPONDING STRUCTURE
1. penis	a. ejaculatory duct
2. uterus	b. myometrium
3. seminal vesicle	c. corpus cavernosus
4. fallopian tube	d. fimbria
5. ovary	e. corpus luteum

*|IL017T|IL|0688|MA|D |194|C1|0| |000028
ANSWERS: 1-d, 2-c, 3-f, 4-b, 5-a
Match the benign breast disease with the disease symptoms.

BREAST DISEASE	SYMPTOMS
1. lipoma	a. pain, nodularity, a dominant mass, cysts and occasional nipple discharge
2. fibroadenoma	b. changing menstrual cycle, pain, recent lump and tenderness
3. acute mastitis	c. Most common benign breast tumor is firm, rubbery and freely mobile.
4. cystic disease	d. is entirely composed of fatty tissue
5. fibrocystic disease	e. pain, swelling and reddening of overlying skin
	f. occurs during a lactation, beginning in the lactiferous ducts and spreading via the lymphatics or blood

*|IL017T|IL|0688|MA|D |196|C1|0| |000029
ANSWERS: 1-d, 2-h, 3-d, 4-f, 5-g, 6-e
Match the fetal structure with the menstrual weeks in which it appears.

FETAL STRUCTURE	MENSTRUAL WEEKS
1. gestational Sac	a. 3-4 weeks
2. BPD	b. 4-5 weeks
3. fetal pole	c. 5-6 weeks
4. somatic activity	d. 6-7 weeks
5. placenta	e. 7-8 weeks
6. cardiac activity	f. 8-9 weeks
	g. 9-10 weeks
	h. 12 weeks

*|IL017T|IL|0688|MA|D |198|C1|0| |000030
ANSWERS: 1-d, 2-a, 3-e, 4-c, 5-b
Match the TNM classification with the tumor description.

CLASSIFICATION	DESCRIPTION
1. T0 N0 M0	a. small lesion confined to organ of origin with no evidence of vascular and lymphatic spread of metastasis.
2. T1 N0 M0	
3. T2 N1 M0	
4. T3 N2 M0	
5. T4 N3 M+	b. more extensive lesion than 5 cm with distant metastasis
	c. extensive lesion greater than 5 cm with fixation into deeper structure and wikth bone and lymph invasion but no evidence of metastasis
	d. occult lesion; no evidence clinically
	e. tumor less than 5 cm invading surrounding tissue and first station lymph nodes but no evidences of metastasis

*|IL017T|IL|0688|MA|E |219|C1|0| |000031
ANSWERS: 1-b, 2-d, 3-c, 4-a
Match the ionizing radiation heading with the quality factors.

IONIZING RADIATION	QUALITY FACTORS
1. thermal neutrons	a. 1
2. heavy ions	b. 3
3. fast neutrons	c. 10
4. photons	d. 20

*|IL017T|IL|0688|MA|E |220|C1|0| |000032
ANSWERS: 1-d, 2-e, 3-b, 4-a, 5-c
Match the radioactive waste with the disposal method associated to it.

TYPE OF RADIOACTIVE WASTE	USUAL METHOD OF DISPOSAL
1. Xenon 133	a. sewerage
2. "Cold trash"	b. decay in storage
3. "Hot trash"	c. transfer to authorized recipient
4. Iodine 131 stock solution	d. venting to outside
5. iodine standard solution	

*|IL017T|IL|0688|MA|F |229|C1|0| |000033
ANSWERS: 1-e, 2-c, 3-b, 4-d
Match the radiologic occupatinal area with the definition of the occupation.

RADIOLOGIC OCCUPATIONAL AREA	OCCUPATION DEFINITION
1. radiology	a. the use of absorption (and emission) of microwaves or radiowaves by electrons or nuclei respectively in the presence of a static magnetic field for diagnosing disease in humans
2. nuclear medicine	b. the use of nonionizing, high frequency sound waves to generate an image of a particular structure for medical or research purposes
3. diagnostic sonography (ultrasound)	c. the use of radioactive material to humans or animals for dianostic, therapeutic or research purpose
4. radiation therapy	d. the use of ionizing radiation to humans or animals for the treatment of diseases
	e. the use of ionizing radiation to humans or animals for diagnostic purposes